Volume 93 Number 4

STEEL

For forty-eight Years—IRON TRADE REVIEW

PRODUCTION • PROCESSING • DISTRIBUTION • USE

The Week in Perspective

WITH the President issuing his blanket code for a 35-hour week and a 40-cent hourly minimum for industrial labor, government by presidential fiat becomes a fact and the White House is turned into the employment office of the nation. Labor reaches a new height of power; industry plumbs a new low in controlling its destinies. A publicity campaign rivaling the Liberty loan drives will enthrone jobs with the same zeal that the Hun was excoriated. Whatever its private reactions, the temper of the times is co-operation, and industry is taking its cue gracefully.

Industry Is "One Up" on the President

Iron and steel, better advised than usual, anticipated the situation with the filing of its code July 15 and its immediate 15 per cent advance in common labor rates, now followed by a retroactive rise in salaries (p. 12). If iron and steel's code is not effective before the final date for applying the President's order, the fault will be Washington's. But the 40-cent hourly minimum doubtless fortifies organized labor in objecting to the labor provisions of the iron and steel code, especially the 25-cent rate in the South, so the industry is not wholly whitewashed.

Government Uncertainty Proves Blighting

Like other industries, steel becomes increasingly sensitive to the radical program of Washington, and, coupled with seasonal factors and the working-off of specifications against low-price second-quarter contracts, the steel operating rate has leveled off at 57 per cent (p. 16). A decline this week is possible. . . . For the long pull, however, the industry remains confident, expecting a good volume of automobile sales in the fall, tonnage requirements for the public works program, an increased demand for railroad equipment repairs (p. 33). Conforming with the domestic situation, foreign pig iron and fluorspar have been advanced, and most foreign iron ores have been marked up. . . . Anticipating a substantial market this fall, some automobile manufacturers are planning new models for early showing (p. 17), but a majority will offer current lines so long as they sell.

"Red" In Financial Reports Turning Pink

Tuesday the showing of the United States Steel Corp. for the second quarter will be disclosed, followed by Bethlehem and other important producers later in the week. First returns (p. 18) show losses in the second quarter lower than in the first. . . . These losses will be further diminished this quarter if the program of withdrawing preferential prices,

For his combination commercial building and billboard in Hollywood, Carl Laemmle, Universal Pictures magnate, chose steel. Framework is steel, with much stainless trim. Projected letters for shadow advertising are zinc, chromium plated. Note color dissolving projectors and luminous screen background for clock. Richard J. Neutra was the architect

based upon quantity, are withdrawn (p. 11). A single price base promises to be the most important outcome of the new selling plan set up by the iron and steel code. . . . In Europe, where ententes and comptoirs determine prices, the outlook continues good though unspectacular (p. 49). Germans and French report their domestic markets expanding.

Flux Technique Banishes Dross

Formation of dross in the hot galvanizing process has been regarded as a seemingly necessary although undesirable handmaiden. Caused by small amounts of iron being absorbed by the zinc, this dross formed by introduction of work coated with iron salts has been eliminated completely (p. 23) with the use of a recently developed flux technique, neutral rather than active in character; furthermore, the alloy layer structures in the zinc coat which normally cause fracture have been minimized . . . . In another type of bath—the liquid heat treating bath—high heat transfer is afforded (p. 31) by immersion gas burners which fire through flue coils immersed at the bottom of the tank.

Enameled Steel for Walls and Shelves

If development work indicates the future trend, we will all be living in steel houses before many more years elapse. A new structure, now being erected in Wheeling, W. Vå., will incorporate (p. 26) prefabricated floor and wall sections, recently perfected to achieve fireproof construction at reasonable cost. Connections will be arc welded. Interior walls are to be plaster on metal lath, exterior surface porcelain enameled steel sections . . . . Incidentally, a low-phosphorus iron stovepipe, protected by a porcelain enamel ground coat, is still in good condition after 8 years of service in the home of a stove manufacturer, who made further use (p. 28) of porcelain enameled metal as a covering for kitchen window sills and cupboard shelves.

Open Hearth the Womb of Industry's Metals

Average maximum velocity of gases in an open-hearth furnace, considered as at 32 degrees Fahr., should in the case of producer gas firing range between 15 and 25 feet per second. The lower figure is the minimum for sufficient turbulence; the higher limit, while effecting beter combustion, is apt (p. 29) to cause excessive erosion of refractories in contacted areas. . . . Open-hearth hot-rolled deep-drawing strip steel is used in the construction of a new type of beer barrel (p. 27), comprising inner and outer shells, the latter in three sections, welded over the former, with sufficient air space between for insulation . . . . Stainless steel (p. 28) is replacing the practiced fingers of farm hands in milking cows.

The VOICE of INDUSTRY

Communications appearing here do not necessarily reflect the opinion of STEEL *or of its editors.*

A Statement from Headquarters*

In the short time since the national industrial recovery act was passed, four of the greatest industries in the country have been able to get together to frame a constitution for self-government in their industries. Whatever people may say about that law and I, myself, think of it as an experiment, it does permit something that a great many people have been seeking since the war.

No small part of our recessions and peaks in business have been due to the fact that business has had no power to govern itself. The Sherman antitrust law was wholly prohibitory; the federal trade commission was purely a police organization. Former Chief Justice Hughes said that after 40 years of judicial interpretation of the Sherman law it was safe to say that no business man was informed as to what he could do under that Act, although he was told many times what he could not do under the Act.

A little group of men who had sat in the mobilization of business during the war proposed this same sort of a set-up where there could be some kind of an understanding between government and industry where, if industry has a plan to present in a collective fashion that is helpful and not harmful to the public, it may come and present the plan and get a license to go ahead under the supervision of some governing body—not a police body but a supervising group to see that nothing is done against the public interest.

The larger industries want to attempt that experiment and while nobody ought to sit down and tell them in advance what they ought to put in their code, what they should leave out and how it ought to be administered, after a code has been agreed upon and after we have taken out everything that might be termed an abuse, we ought to allow these industries the widest extent we can to govern themselves for the benefit of themselves and the country.

That general purpose has been somewhat obscured in the public mind by the absolute necessity with which we are faced in this country to have an employment drive. The raising of prices and the volume of production have already unquestionably far out-stretched consuming power. The things produced have exceeded the capacity of the country to consume them in a country with 12 million people out of work.

The first phase of the operation of this law is to spread employment and try to create a consuming power for the greatest market in the world, which we undoubtedly have. The first thing to do—never losing sight of the main purpose of this Act—is to put these people back to work. If you don't do that you are going to have a crash. To see if you can start this upward spiral is the reason why we place so much emphasis at this early stage on hours and wages.

I don't know how to make it clearer. I find that in dealing with the people who claim to be bewildered that they have not read the only two bulletins that have come from this office: No. 1, the President's statement outlining the policies of the Act; and No. 2, telling how codes should be submitted.

Gen. HUGH S. JOHNSON, Administrator
National Industrial Recovery Act

*Excerpts from a statement made at a meeting of Associated Business Papers Inc. and National Conference of Business Paper Editors in Washington, July 14.

Steel Exempt from Blanket Code, but Labor Gets Weapon

IRON and steel industry's code of fair competition, drafted under the national industrial recovery act and submitted July 15, comes up for hearing at Washington July 31. Gen. Hugh S. Johnson, administrator of the act, will sit in on all hearings, but Kenneth M. Simpson, metallurgist and president of the International Chromium Process Corp., will preside as deputy administrator.

John Van Wicheren Reynders, formerly with the Pennsylvania Steel Co., Central Iron & Steel Co. and American Tube & Stamping Co. and latterly a consultant, has been appointed to the industrial advisory board of the recovery administration and will advise on the steel code. Advisers for the labor and consumer boards will be named later.

A new complication is the President's blanket code, imposing a 35-hour weekly maximum and a 40-cent minimum hourly wage rate for industrial workers. This program compares with the iron and steel code week of 40 hours and minimum of 35 cents in certain northern districts and 25 cents in the South.

Industries operating under their own codes will be exempt, it is understood, from this blanket code. The intent of Washington is to have the blanket code effective as early in August as individual manufacturers file their assent, but in no case later than Aug. 31. With the steel code set for hearing beginning July 31, it is believed that it will be effective in time to avert the incidence of the blanket code.

But the 40-cent minimum is expected to intensify the objections, already voiced, of organized labor to the wage, hour and labor provisions of the steel code. It still is forecast that the labor opposition will be the only serious one to the steel code.

Pending the hearing on the code, the iron and steel industry is preparing to revise its market practice. Although no definite policy has been announced, it appears the intent of important producers to adopt a single price for all buyers, with Aug. 1 the deadline set in most products.

This would not only eliminate concessions to quantity buyers but also would ultimately abolish quarterly contracts.

The present intent seems to be that few if any preferential prices will be filed with the American Iron and Steel institute. This is expected to develop strenuous objections,

THE new steel map of the United States as drawn in the iron and steel code. To harmonize living conditions and wages, 20 districts are set up in the code, the key being given on the next page

especially from structural fabricators and automobile manufacturers.

Some steel manufacturers are continuing to operate on a 48-hour week and prior to the announcement of the President's blanket code had intended not to alter their practice until the effective date of the steel code. One Cleveland steel company, however, is going to a 6-hour day.

When it advanced wages 15 per cent last week, the National Steel Corp. also included executives. Friday the Carnegie Steel Co. announced that it also was raising salaries 15 per cent, retroactive to July 17, with other Steel corporation subsidiaries expected to follow suit, as well as independent steelmakers.

The iron and steel code, an ambitious document of 12,000 words, embraces 12 Articles and nine Schedules, the latter numbered from A to I inclusive.

Participation Not Limited

Article I consists of definitions of terms. Article II states the purpose of the code, which is to "effectuate the policy of Title I of the National Industrial Recovery Act." Article III, dealing with membership, states that any member of the industry is eligible for membership in the code and that any member desiring membership may do so by signing and delivering to the secretary a letter, the form of which is set forth in Schedule A.

Article IV deals with hours of labor, rates of pay and other conditions of employment. The first section is simply a re-statement of Section 7 of the Recovery act. Sections 2 and 3 state the industry's policy of labor relations and probably will be the point of attack by organized labor. The pertinent parts of these sections follow:

The plants of the industry are open to capable workmen, without regard to their membership or non-membership in any labor organization. The industry firmly believes that the unqualified maintenance of that principle is in the interests of its employes.

For many years the members of the industry have and now are prepared to deal directly with the employes of such members collectively on all matters relating to their employment. The principles of collective bargaining under which certain members of the industry have dealt with their employes are embodied in employe representation plans, which are now in force at plants of members of the Industry generally. The fundamental principles of such plans are set forth in Schedule C. It is the belief of the Industry that the method of collective bargaining set forth in such plans provides for a day-to-day adjustment of all matters relating to the employment of employes in the Industry and at the same time insures to such employes a knowledge and understanding of the conditions of the business of their employer which they would otherwise be unable to obtain; that such principles should be maintained; and that the rights of the employes and members of the Industry to bargain collectively through representatives elected or appointed and acting in accordance with such plans without interference, restraint or coercion of any sort should be preserved and protected.

Section 4 prohibits the employment of persons under 16 years of age. Section 5 provides for geographical wage differentials. Twenty-one wage districts described in Schedule D are established. Section 6 provides for minimum rates of pay per hour, which are listed in Schedule E. The import of Sections 5 and 6 and Schedules D and E is summarized on the accompanying map showing wage districts and minimum wage rates.

Article V declares that it is the consensus of opinion of the industry that it is not necessary in furthering the policy of the Recovery act, to make any specific provisions in the code for controlling or regulating the volume of production or for allocating production or sales among its members. However, in Section 2 of Article V it is provided that until the code shall have been amended none of the members of the code shall initiate the construction of any new blast furnaces or open hearth or bessemer steel capacity.

Article VI, on the administration of the code, provides for a board of directors, secretary, treasurer, their duties, the appropriation of expenses of administering the code and the appointment of committees by the board of directors if necessary.

Article VII reads as follows:

None of the members of the code shall make any sale of any product at a price or on terms and conditions more favorable to the purchaser thereof than the price, terms or conditions established by such member in accordance with the provisions of Schedule F annexed hereto and in effect at the time of such sale; nor except as otherwise provided in such Schedule F, shall any member of the code make any contract of sale of any product at a price or on terms and conditions more favorable to the purchaser thereof than the price, terms and conditions established as aforesaid and in effect at the time of the making of such contract of sale.

Schedule F, outlining prices and terms of payment, specifies that every member of the code shall file with the secretary a list showing the base prices for all of its products at each basing point for such product at which a plant of a member is located. Delivered prices shall be the sum of the base plus the all-rail freight, except that recognition may be given for reduced delivery charges by water, truck or other transportation.

For violation of schedule F, which means any concession under the published bases, a fine of $10 per ton on all such sales will be imposed.

The discount for all products is made ½ of 1 per cent for payment in 10 days.

Basing points for all products are shown in the chart on page 13.

Unfair Practices Defined

Article VIII states that the acts described in Schedule I shall constitute unfair practices and shall be deemed a violation of the code. Any member of the industry which shall directly, or indirectly through any officer, employe, agent or representative, knowingly use or employ any of such unfair practices shall be guilty of a violation of the code. The unfair practices listed in Schedule I are as follows:

A—Making or promising to any purchaser or prospective purchaser of any product, or to any officer, employe, agent or representative of any such purchaser or prospective purchaser, any bribe, gratuity, gift or other payment or remuneration, directly or indirectly.

B—Procuring, otherwise than with the consent of any member of the code, any information concerning the business of such member which is properly regarded by it as a trade secret or confidential within its organization, other than information relating to a violation of any provision of the code.

C—Imitating or simulating any design, style, mark or brand used by any other member of the code.

D—Using or submitting any mate-

Labor Rates Vary from 25c In South to 40c in North

MINIMUM rates of pay for common labor for the districts numbered on the map on page 11 are as follows:

	Cents per Hour
1—Eastern district	35
2—Johnstown district	37
3—Pittsburgh district	40
4—Youngstown Valley district	40
5—North Ohio River district..	40
6—Canton, Massillon and Mansfield district	37
7—Cleveland district	40
8—Buffalo district	38
9—Detroit-Toledo district	40
10—South Ohio River district..	37
11—Indiana-Illinois-St. Louis district	37
12—Chicago district	40
13—Southern district	25
14—Birmingham district	27
15—Kansas City district	35
16—Duluth district	37
17—Colorado district	40
18—Utah district	39
19—Seattle district	38
20—San Francisco district	37
21—Los Angeles district	35

rial superior in quality to that specified by the purchaser of any product or using or submitting any material or any method of manufacture not in accord with any applicable law, rule or regulation of any governmental authority.

E—Cancelling in whole or in part, or permitting the cancellation in whole or in part of, any contract of sale of any product, except for a fair consideration, or paying or allowing to any purchaser in connection with the sale of any product any rebate, commission, credit, discount, adjustment or similar concession other than as is permitted by the code and specified in the contract of sale.

F—Disseminating, publishing or circulating any false or misleading information relative to any product or price for any product of any member of the code, or the credit standing or ability of any member thereof to perform any work or manufacture or produce any product, or to the conditions of employment among the employes of any member thereof.

G—Inducing or attempting to induce by any means any party to a contract with a member of the code to violate such contract.

H—Aiding or abetting any person, firm, association or corporation in any unfair practice.

I—Making or giving to any purchaser of any product any guaranty or protection in any form against decline in the market price of such product.

J—Stating in the invoice of any product as the date thereof a date later than the date of the shipment of such product, or including in any invoice any product shipped on a date earlier than the date of such invoice.

Must Use Nomenclature

K—Making any sale or contract of sale of any product under any description which does not fully describe such product in terms customarily used in the industry.

L—Rendering to any purchaser of any product in or in connection with the sale of such product any service, unless fair compensation for such service shall be paid by such purchaser.

M—Any violation of any other provision of the code, whether or not therein expressed to be such, or using or employing any practice not hereinabove in this Schedule I described which the board of directors by the affirmative vote of three-fourths of the whole board shall have declared to be a practice that would tend to defeat the policy of Title 1 of the National Industrial Recovery act and, therefore, an unfair practice, and of which determination by such board the secretary shall be given notice to the members of the code and to the President.

Article IX provides that the board of directors shall have power to request each member of the code to furnish to the secretary such information on production, shipments, sales, unfilled orders, hours of labor, rates of pay, etc., as the Board shall deem necessary. Such information furnished shall be subject to checking for the purpose of verification by an examination of the books of the member by accountants designated by the board. Section 4 provides that information thus provided is of confidential character.

Article X provides that each member of the code which shall violate any provision shall pay to the treasurer $10 per ton of any products sold by such member in violation of any provision. The remainder of the article deals with the disposition of funds collected for penalties and for powers accorded the board in connections with penalties.

Article XI deals with general provisions, mostly legal in character.

Article XII explains how the code can be amended. It is stated that the code shall continue in effect for a period of 70 days after the effective date of the code and thereafter until terminated. It may be terminated at any time after the expiration of such period by a 75 per cent vote of members.

Chicago Basing Is Little Changed

CHICAGO—Basing points for various steel products as listed in the proposed iron and steel code represent no important changes from existing practice so far as the Chicago district is concerned.

Waukegan, Ill., currently a base point for delivery in Chicago of wire products produced in the former city, would be omitted as such a base from the new schedule.

Action has yet to be taken on the adoption or rejection of a single price basis to all buyers. Provisions covering this subject are not included in the fair practice code, but this matter is expected to be acted upon shortly by the industry as a whole through the American Iron and Steel institute. In some quarters it is thought that the single price will be adopted.

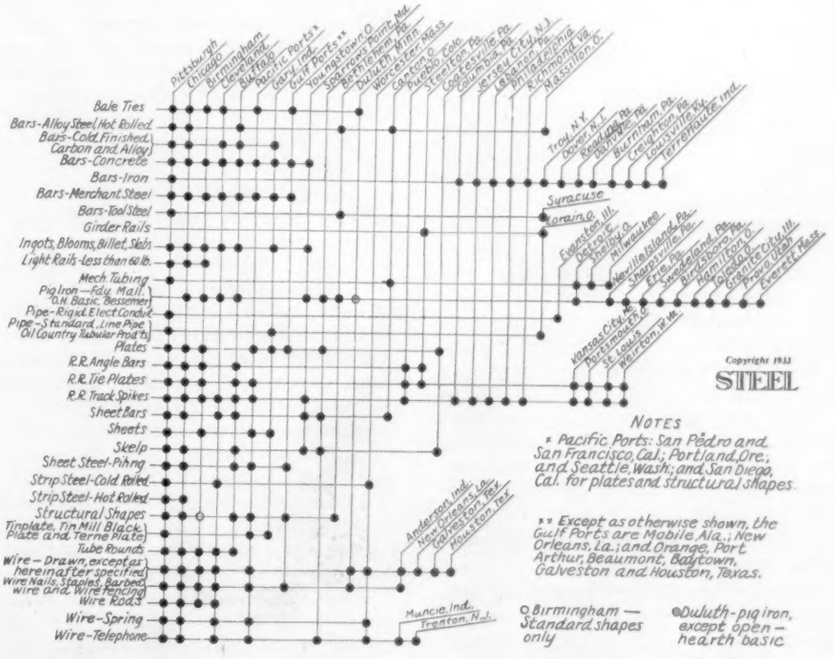
Chicago steel plants universally have announced wage advances, about 30,000 workers being affected. Increases generally have amounted to 15 per cent, although in the case of minimum wage earners pay has been boosted from 33 to 40 cents per hour, or an advance of more than 20 per cent.

In certain instances wages have been restored to levels prevailing prior to the last cut on Oct. 1, 1932. It is pointed out, however, that a maximum working week of 40 hours will not serve to require the addition of many employes under present operating schedules.

Steel workers recently averaged about a maximum of 40 hours work per week, although if production gains further it would be necessary to increase the number of hours or to hire more men.

Gains in employment the past several months have been retarded by the fact that the industry to a large extent used the stagger system in an attempt to spread work as far as possible. Rising production consequently meant more hours work first and additional workers later.

Few additional price revisions of a major nature are expected for the rest of this quarter, with future changes seen as dependent upon the financial showing the industry is able to make under the higher costs resulting from advances in wages and in prices of various materials.



A short cut to the basing points on all products in the iron and steel code

Higher Wages Aid To Over 100,000

PITTSBURGH—Over 100,000 men in steel mills here are directly affected by the steel industry code and the wage advances made effective July 15. Several thousand executives and clerical employes benefit from the 15 per cent advance in salaries announced Friday but made retroactive to July 17.

For most of the 100,000 to 125,000 wage earners in the Pittsburgh and adjoining West Virginia and Johnstown districts, the code raises the basic wage rate to a minimum of 40 cents an hour. Previously, these workers were paid approximately 33 cents. For those on piece or special rates the increase is a flat 15 per cent.

In round figures, these wage earners drew $8,500,000 in pay envelopes in June. On the basis of the same number employed, the increase for a full month will be $750,000.

Will Require More Workers

So many of the 100,000 to 125,000 now employed have been on part time or staggered jobs that recent expansion in operations has merely implied an increase in the number of hours and no increase in the number of names on payrolls. But mathematically it can be foreseen that the shorter week will require 20,000 additional men.

A complication arises here in that just so many skilled men can be employed in a steel mill. Take tin mills for example. For several months all available experienced tin mill hands have been in employ. To cut down the present week of 16 turns to a 40-hour week will mean the hiring of additional skilled tin mill hands. These are not available anywhere in the country.

No steel mill stands able today to afford to hire green help—even though required by law or if the willingness to work is at hand. Especially, when such hired help is to be thrown into the breach at an important production post.

Obviously, higher selling prices are but a matter of a short time in the steel industry. To raise wages and thereby costs so drastically means that the steel producer must raise his selling prices.

Among the important decisions that the framers of the code threshed out was the decision that by Aug. 1 and as soon thereafter as shipments under July contracts ran out, all of the steel buying group would be placed on a single price basis.

Former "preferred" customers will find that they are about to pay as much for their steel as the small less-carload taker. "Preferred" buyers had through July as their last fling at the prices they once enjoyed beneath the published market.

Coupled with the decision to go to a single price basis the industry is now attempting to work out some new classification of extras for quantities. A horizontal price advance is an early likelihood for all finished steel products.

Pencoyd No Longer Is Base for Shapes

NEW YORK—While basing points under the new steel code show relatively few changes, there are, nevertheless, certain revisions of interest to the eastern iron and steel trade.

Under shapes, the Pencoyd, Pa., basing point is eliminated, leaving Bethlehem, Pa., as the only eastern basing point. While this change will provide Pittsburgh mills with greater leeway in the seaboard district, the establishment of a single base may make for greater stability on this particular product, because for some time, in addition to the two existing basing points, other eastern sellers have upon occasion been quoting on the basis of their own mills.

The effect of the single basing point in the East will make for an

(*Please turn to Page* 51)

More Ships Out as Ore Demand Grows

WITH the Pittsburgh Steamship Co. commissioning 40 more iron ore carriers, vessel activity on the Great Lakes will shortly approximate the late 1930 rate. Because of this surge in shipping, estimates of the 1933 movement of iron ore on the lakes have been revised upward to at least 20,000,000 tons, compared with 3,500,000 tons shipped last year.

Of the 330 vessels assigned to the ore trade on the Great Lakes, 211 will be in commission as soon as the additions of the Pittsburgh company, subsidiary of the United States Steel Corp., and one additional vessel by the Shenango interest are in operation. By comparison, on June 15 only 99 vessels were in operation, and on Aug. 1, 1932, only 76.

The decision of the Pittsburgh company to add 40 to its active fleet follows authorization by the Steel corporation of the shipment of 3,000,000 tons additional this year. There will be a corresponding increase at all mining properties.

These 40 resuming, the Pittsburgh company will have 71 out of 86 vessels active. Interlake Steamship Co., next largest fleet, has 21 out of 49 in service. The active vessels to total owned for other fleets is as follows:

Hutchinson (including Inland fleet), 14 out of 22; Cleveland-Cliffs, all 21; Bethlehem, 9 out of 16; Great Lakes, 5 out of 19; Boland & Cornelius, 8 out of 13; Tomlinson, 2 out of 12; Hanna, all 10; Columbia, 5 out of 10; Wilson, 9 out of 11; Reiss, all 9; Valley Camp, 6 out of 9; Steinbrenner, 2 out of 5; Midland, 5 out of 6; Interstate (Jones & Laughlin), all 4; Shenango, all 3; Wisconsin, 1 out of 1; Buckeye, all 4; Sullivan, 1 out of 2; Brown, 1 out of 2.

Those lines with no vessel operation include Kinney, with 5 vessels; Jenkins, 5; Ford, 2; Barlum, 2; Sellwood, 1; and Maytham, 1.

While some of the 210 are not principally in the ore trade, at least 175 could be so considered.

Rotary Electric Steel Co. Announces Its Staff

Rotary Electric Steel Co., Detroit, organized by H. M. Naugle, president, and A. J. Townsend, vice president, to manufacture cold-finished steel bars of standard analysis by the new rotary method, announces the affiliation of the following men with the company:

John S. Andrews as sales manager. He formerly was in the Detroit office of the Republic Steel Corp., following experience in the Massillon and Youngstown offices and an earlier connection with the Union Drawn Steel Co.

N. F. Melville as chief metallurgist. He formerly was with the Columbia Steel Co. and for the last five years with the Pittsburgh Steel Co.

Paul T. Wharton as assistant chief metallurgist. He formerly was with the Columbia Steel Co. and for the last five years with the American Rolling Mill Co.

J. A. Nock as chief chemist. He formerly was chief chemist of Plant B, alloy division, Republic Steel Corp., at Canton, O.

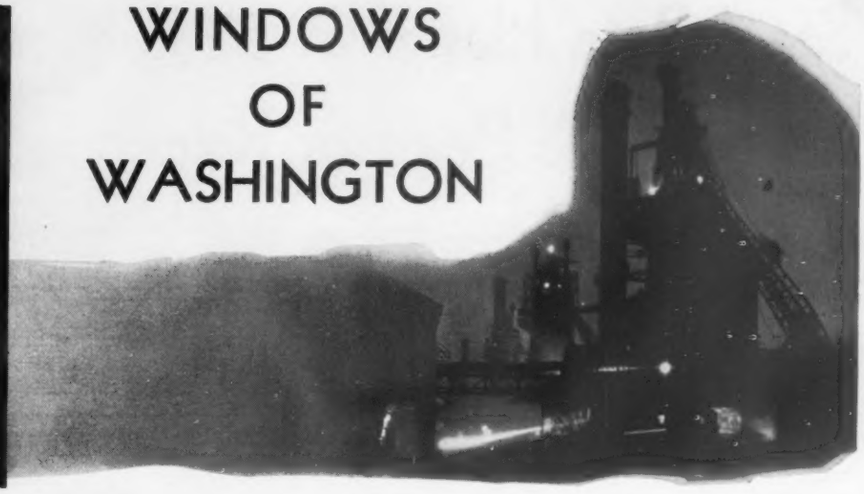
L. S. Lottier as metallurgist. He formerly was with the Air Reduction Sales Co.

E. G. Stedman as mill metallurgist. For 14 years he was superintendent of melting for the Timken Steel & Tube Co., Canton, O., and has had extended electric furnace experience.

J. P. Doane as service manager. He formerly was with the Columbia Steel Co.

W. E. Bable as assistant service manager. He formerly was with the Union Drawn Steel Co.

WINDOWS OF WASHINGTON



WASHINGTON

Steel Code in Key Position

• • •

Johnson Outlines Essentials

• • •

NIRA Employment Aids174

WHEN the code of fair competition for the iron and steel industry is discussed in open hearings conducted by Deputy Administrator Kenneth M. Simpson, the fate of much more than the steel code itself will be at stake.

Among leaders of many strong industries, progress of the steel code throughout the hearings will be watched as closely as if it were a test case in the highest court. Upon the success or failure of the steel industry to satisfy the administration, hangs the action of dozens of other important groups in connection with their codes.

It is evident that high officials in the administration are aware of the key position of the steel code. Considering the conscientious effort put forth in the preparation of the code (which effort is self-evident to anyone who reads the document), N. I. R. A. probably will try to avoid deadlocks which would impair the value of the entire code.

Undoubtedly the first hurdle will be the provisions dealing with labor relations. Members of General Johnson's labor advisory board lost no time in denouncing this section of the code. They declare it does not meet the requirements of Section 7 of the act either in spirit or in purpose.

One thing is fairly certain, namely, that if the ambitious code of fair competition of the steel industry is wrecked upon the shoals of union labor discord, the entire recovery program will suffer a serious setback. Some leaders in the steel industry feel that it is a case of the adoption of the code already submitted, or no code at all.

Also, there is strong intimation that if the steel industry's proposal in regard to labor relations proves to be unacceptable to the administration, the industry will be forced to go direct to the Supreme Court in order to protect its rights.

Hearings on the code promise to pack the auditorium. General Johnson will preside, but Mr. Simpson will conduct the hearings in the same manner that Mr. Allen conducted the hearings on the cotton textile code.

Edward R. Stettinius Jr., Washington representative of the industrial advisory board, has asked John V. W. Reynders to serve as the board's adviser to the recovery administration in connection with the preparation and hearings of the code.

OF THE codes submitted thus far, that of the shipbuilding industry with 600 words is the shortest and simplest and the steel code with 12,000 words is the longest and most complicated.

Many of the smaller associations are greatly puzzled as to what they should put in a code. When General Johnson was asked what is essential in a code, he replied that for some industries a statement of hours and wages and a provision that goods should not be sold below cost would be sufficient at the beginning.

N. I. R. A. seems to be trying to emphasize the need of covering these three factors first; more detailed trade practices and other refinements are secondary, and if they should be required they can be brought in through supplementary codes submitted later.

NUMEROUS small groups in the machinery and equipment industries are puzzled as to how they should get into the N. I. R. A. picture. Most of these groups have completed their codes or have them well under way. The big question is whether they should submit these codes or whether they should unite under a general machinery organization such as the Machinery and Allied Products institute.

In Washington, the best opinion seems to be that as many of the small groups as can possibly do so should join in one big over-all organization, which should submit a general code pertaining to wages and hours and broader definitions of fair practice. Then, if necessary, those smaller groups which have peculiar problems may submit supplementary codes to deal with the specific problems of their industry.

UP TO the middle of July, General Johnson had appointed 174 persons to positions in the National Re-

(*Please turn to Page* 42)

Washington on "Horseback"

MANY new phrases are coming into use in the administration of the emergency legislation. One of the latest is "horseback opinion." On several occasions recently when administrators were asked for an off-hand answer to a given question, they replied "a horseback opinion would be so and so."

The term seems to have been borrowed from the lumber industry. When a timber expert surveys a forest in order to estimate the amount of standing timber, he usually rides about on horseback.

For an extremely accurate check he dismounts occasionally, calculates the average number of trees in a given area, estimates the average number of feet per tree and arrives at a fairly accurate total.

When only a rough estimate is required, he simply rides through the forest, making his estimates without dismounting. This is a "horseback opinion."

Steel Rate Hangs at 57%; May Prove Peak of Rise

HOLDING last week at 57 per cent, steelmaking operations failed to rise for the first time since the fourth week of March. This week a decline is possible, but it will be limited to several points.

It is believed that the upswing from 14 per cent in the fourth week of March to 57 per cent in the second week of July—a period of less than four months—is a record for swift expansion.

Repairs to units that have been pushed at capacity for several months account for some of the easier situation. In others, specifications against second quarter contracts have been met and new business has been discouraged by a stronger price situation.

Pittsburgh, New England and eastern Pennsylvania mills gained last week, but declines at Cleveland and Lorain were an offset.

This week Buffalo and New England mills will gain, but Pittsburgh and Birmingham will ease off. Details for important districts follow:

Chicago

Ingot production the past week maintained its peak rate of the year of 60 per cent, with little variation in this figure anticipated over the coming several weeks. Producers are under pressure for delivery in some products which may necessitate the use of additional open hearths in the near future, with no large gains anticipated prior to the receipt of better business in heavy tonnage products. Blast furnace operations are unchanged, with 13 of 36 steelworks stacks and one merchant furnace active.

Birmingham

Eighteen open hearths being in operation, the ingot rate last week was stationary at 77 per cent, but unless the Tennessee Coal, Iron & Railroad Co. books additional rail business this week a reduction will follow.

Pittsburgh

Steel ingot operations advanced 3 points last week to average 51 per cent for the week. Another blast furnace was blown in by Carnegie Steel Co. when the third Duquesne furnace was lit, thereby making 22 out of 53 steelworks blast furnaces active here. Carnegie Steel Co. is now operating 14 out of 32 in the immediate Pittsburgh district, Jones & Laughlin Steel Corp. 6 out of 11, Pittsburgh Crucible Steel Co. one out of two at Midland, Pa., Pittsburgh Steel Co. one out of two at Monessen, Pa., and National Tube Co. one of four at McKeesport, Pa. Open-hearth schedules are varying, but between 95 and 100 out of 201 open hearths in plants of six leading producers were active through the week. For this week, the ingot melting rate is likely to contract slightly to 50-51 per cent owing to a slight decline in orders which mills entered the past week. However, total unfilled orders still are heavy.

Cleveland

Operation of steelworks here dropped last week to 79 per cent of open-hearth capacity, from 87 per cent the preceding week. This was due to three furnaces being taken off for repairs, one each by Otis Steel Co., Corrigan, McKinney Steel Co. and National Tube Co., the latter at its Lorain, O., works. These furnaces will be returned to service as soon as possible as need for steel is imperative. Except for these furnaces under repair, these three producers have full operation. National Tube Co. blew in an additional blast furnace stack at its plant at Lorain, O., July 19.

Wheeling

With 29 and 30 open hearths operating alternately in two leading plants, steelmaking operations in this district hold at 90 per cent.

Buffalo

Steel operations here held last week at 62 per cent, but this week, with the equivalent of 24 open hearths on, the rate will rise 1 point.

Detroit

All six of the National Steel Corp. open hearths being on, with the ten Ford furnaces still down, the Detroit steel rate is unchanged at 55 per cent, based on tonnage.

Youngstown

Steelmaking operations went up 1 point to 67 per cent last week, with 56 of 83 open-hearth furnaces melting, and this rate is expected to hold at the start of this week. Incoming business is tapering and a dip of several points within a few days is not unlikely. The Carnegie Steel Co., however, lighted a fourth blast furnace at its Ohio Works on July 21, making 14 out of 31 stacks on.

Eastern Pennsylvania

Eastern seaboard operations are fractionally higher at 42 to 43 per cent.

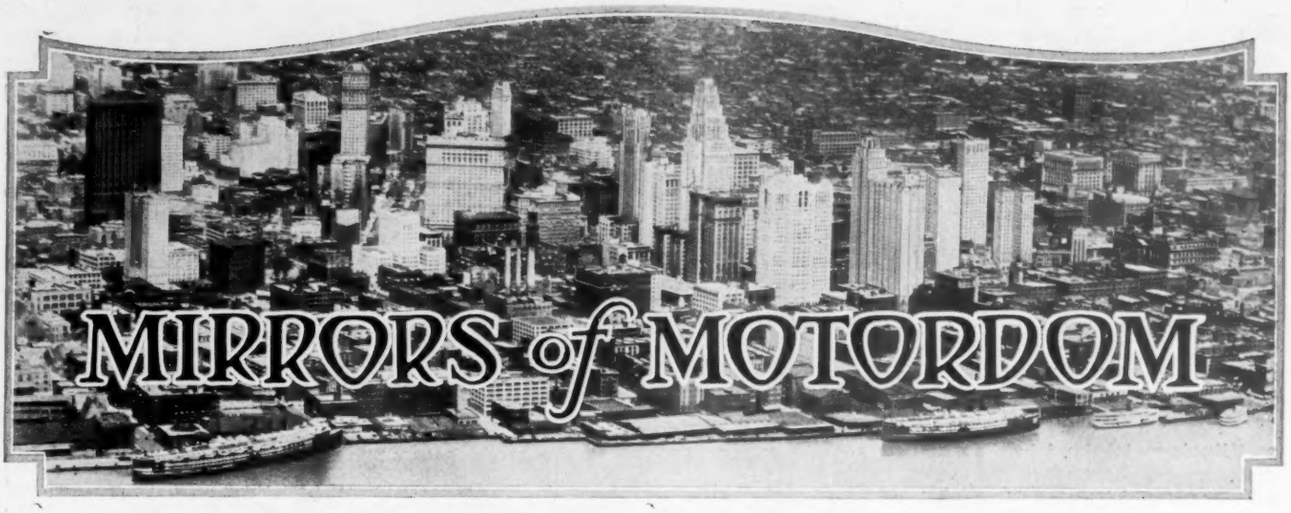
New England

A gain of 3 points last week put the New England operating rate to 86 per cent, with prospects of the rate going to 90 this week. Two steelworks in the district are operating all of their basic and acid open-hearth furnaces at 100 per cent. Three acid open hearths were added during the week. Twelve out of 13 hearths in the district are operating, the one down being under repairs.

Operating Rate of the Steel Industry, by Weeks

All figures except monthly open-hearth and bessemer totals of American Iron and Steel institute are percentages, based on reports from Pittsburgh, Chicago, Youngstown, eastern Pennsylvania, Cleveland, Birmingham, Buffalo, Wheeling, New England, St. Louis, Lorain, Detroit districts. Weeks end Saturday. STEEL's weekly estimates take into account only actual available capacity, which is less than Institute's total.

1932	1st Week	2nd Week	3rd Week	4th Week	5th Week	STEEL's Average	Institute's Monthly Total tons	Institute's Monthly Average
Jan.....	22	25	26	27	28.5	25.7	1,484,991	26.41
Feb.....	28.5	27	25	25	....	26.4	1,481,253	27.40
March....	25	25.5	24.5	23	....	24.5	1,433,337	24.55
April....	23	22	22	23	24	22.8	1,259,629	22.40
May.....	24	24	25.5	23	....	24.1	1,125,243	20.01
June.....	21	17	17	17	....	18.0	912,757	16.23
July.....	14.5	12	15.5	16.5	16.5	15.0	806,722	14.92
Aug.....	14.5	14.5	15.5	14.5	....	14.7	846,730	14.50
Sept.....	13.5	15.5	15	17	....	15.3	991,858	17.64
Oct.....	18	19	19.5	19.5	19.5	19.1	1,087,058	19.33
Nov.....	21	21	19	17.5	....	19.6	1,032,221	18.36
Dec.....	16	15	14	12	13	14.0	861,034	15.31
1933								
Jan.....	15.5	17	18	19	....	17.4	1,030,075	18.23
Feb.....	19	19	19	17	....	18.5	1,086,867	20.83
March....	15	13.5	15	14	15.5	14.6	909,886	15.50
April....	17.5	20.5	25	29	....	23.0	1,362,856	25.08
May.....	33	36	40	43	....	38.0	2,001,991	34.11
June.....	47	48	49	51	54	49.8	2,597,517	45.96
July.....	55	57	57	....	....	....	.....	.....



DETROIT

RETAIL sales of automobiles being what they are, open talk of new models is being discouraged and there is a disposition in general to run as far as possible into the fall with current lines.

For another reason, prices of materials are in a state of flux and now is not the time for figuring costs on models whose production will carry through a large part of 1934.

But competition also being what it is, preliminary plans are being pushed behind the scenes, and occasionally some tool and die work for new lines is placed.

Chrysler is ready with a radical new model which is a closer approach to true streamlining than any other car now in production. The better to cut the wind, the radiator shell is practically pointed; wheels appear inset, so closely do the fenders hug them; the rear end is extremely beavertailed; there are no running boards.

In speculating on Chrysler for 1934, it needs to be remembered that it has no eight below $900, in contrast to Ford, Pontiac and Essex, and that the falling off of almost one-half in DeSoto sales necessitates a remedy.

Auburn has put five new models into production, having made comparatively few changes at the beginning of this year. It has adopted fender valances and will push its dual-ratio rear axle feature more intensively.

Graham has approved changes for 1934 which include wider doors and a longer hood which practically eliminates the cowl.

Essex is announcing deluxe bodies on the Terraplane six and eight chassis, at about $80 more than the standard lines. On these new models air wheels are standard; a radio is installed; there are parking lights on the front fenders; two horns are mounted outside; and two-tone finishes in gunmetal and in black and red are offered.

New Chrysler Model Radical

• • •

Studebaker Changing Bodies

• • •

Will Resist Rise in Prices

Hupp is offering a new six on a 121-inch wheelbase.

Studebaker is adopting for all of its bodies the new system of construction devised by Budd for Rockne, and it is expected that Budd will receive a good share of the Studebaker body requirements.

Studebaker, like Willys, has concluded to place its forging business outside and is closing its own forging department.

The threat of a new Ford hangs continually over the retail market, the engineering department being ready and only a word being required from Henry Ford. It is believed that considerable experimental tool and die work has been done outside the United States.

General Motors has asked some machine tool builders to figure on equipment for turning out transmissions which are gearshiftless. Chrysler also has matured experimental work on an automatic gearshift.

INDICATIVE of the program still ahead of volume producers, Chevrolet on Aug. 1 will still have 145,000 out of its revised schedule of 570,000 for 1933 to assemble.

Originally the schedule for 1933 called for not over 450,000 cars and trucks. In 1932, Chevrolet production totaled 394,005 units. By July 1, output was 358,741, with July production estimated at about 80,000 and the 1933 program now 570,000.

If expectations of Chevrolet officials for a strong fall are realized, and judging from current commitments for materials, Chevrolet will be assembling the present line into October. Of course, some departments which are normally ahead of the assembly line, and material releases which are 30 to 60 days ahead of assembling, will begin anticipating the end of the run by early fall.

While Buick has placed some tool and die work with outside shops, it is believed that the present line will be held in production until about Sept. 30.

Plymouth, still at capacity, or about 40,000 units a month, sees no break in this rate through the early fall. Like Chevrolet, Plymouth shipped more units in the first half year than in all 1932, the ratio being 119,181 in the first half to 117,668 in 1932.

INCREASINGLY it is evident that steelmakers must stand together to obtain the full benefits of their code under the national industrial recovery act.

Of the three largest buyers of automobile steel, one may be considered sympathetic with the proposal to establish remunerative levels—provided, of course, it pays no more than its competitors.

A second is in open rebellion, not disguising its intention of combating any attempt to put the market up. The third is saying little, but its reputation for close buying has been growing and it is not likely to be docile in the face of higher prices, no matter what the reason.

Any one of these three buyers is sufficient to set the market not only for the other two but also for the remainder of the industry. There will be the usual attempt, at least by one of these three interests, to find a weak spot, and to shift tonnage from one mill to another to break down resistance.

Refusal by the steel industry to continue preferential prices based upon volume would precipitate a fight. Preferential prices are not prohibited by the proposed steel code, but they must be filed with the American Iron and Steel institute.

In the steel code, Detroit is mentioned only twice as a base—on pig

iron and seamless tubing. On pig iron this is no deviation from standard practice; the base on tubing is new.

Over the past year, both hot and cold-rolled bars have been sold on a fixed differential over Pittsburgh. These differentials apparently are abandoned, and there will be a return to Pittsburgh-plus.

The Great Lakes division of National Steel Corp., which is rushing two open-hearth furnaces to completion, apparently stands to benefit from its location, as its chief products—sheets and strip—are based at Pittsburgh.

Producers on the lakefront, such as Illinois and Inland in the Chicago district and Bethlehem at Buffalo, also have an advantage inasmuch as they can pass along to consumers the benefit of water transportation, so long as they maintain their published Pittsburgh, Buffalo or Chicago base. All-rail rates to Detroit are 28½ cents from Pittsburgh. 27 from Chicago, 25½ from Buffalo and 22 from Cleveland.

So far as can be learned, inventories of neither pig iron nor finished steel have not been enlarged disproportionate to increased consumption. As production of automobiles or parts increases, a larger "bank" or "float" is required and hence heavier schedules for the assembly line have compelled the various parts and supply divisions to anticipate. But deliberate speculation in raw materials appears negligible.

WITH his new Manufacturers' National bank, Henry Ford at last is in the banking business, competing with the new National Bank of Detroit, which General Motors in a large way and Chrysler in a small way promoted.

The Ford bank, capitalized at $5,250,000, is in some measure the successor to the Guardian group and by means of an R. F. C. loan will make a further partial payment to depositors. The other large Detroit bank—the First National—may be reorganized.

The General Motors bank, capitalized at $25,000,000 has not been popular, being regarded as an "outside" institution. So engrossed has Detroit been in starting from scratch that even the Ford advent into the banking business has created no stir.

Incidentally, the fact that there has been so little speculation in raw materials in the face of a rising market is due largely to the bank situation. Improvement in business came close on the heels of the bank holiday, most Michigan manufacturing interests had to depend upon the generosity of the credit departments of their suppliers for their materials, and whatever free money these

(*Please turn to Page* 42)

Died:

WILLIAM LUKENS WARD, 76, chairman and president of the Russell, Burdsall & Ward Bolt & Nut Co., Port Chester, N. Y., July 16, in a New York hospital, where he had been recuperating from an operation.

Mr. Ward, long a leader in the bolt and nut industry and prominent in civic and political activities of his community, was born Sept. 2, 1856, in Greenwich, Conn., the son of William E. Ward, who before him was leader in the industry. Upon learning the mechanic's trade in the plant of Russell, Burdsall & Ward, of which his father was president, he was given $10,000 by the elder Ward to start his own bolt and nut business, with the late Samuel Comly as partner.

By 1902 Mr. Ward was able to merge with his father's concern and become president of the combined organizations. Under his leadership, the Russell, Burdsall & Ward Bolt & Nut Co., which was the outgrowth of the two companies, became probably the largest concern in the bolt and nut industry, with plants at Rock Falls, Ill., and Coraopolis, Pa., as well as at Port Chester.

Mr. Ward received his education at Friends' seminary and at the School of Mines, Columbia university, both of New York. As leader of the Westchester county republican organization for 37 consecutive years, he obtained statewide, if not national, recognition in the field of politics. A "friend of presidents," he knew them all personally since and including William McKinley.

He was a member of numerous organizations, including the American Iron and Steel institute and the Engineers club, New York. He is survived by two sons and two daughters. His sons, Evans and Warren, are actively identified with the company, the former as general manager.

□ □ □

Pentecost Mitchell, who retired in March, 1930, as president of the Oliver Iron Mining Co., ore subsidiary of the United States Steel Corp., July 18, at his home in Santa Barbara, Calif. For a number of years he was vice president of the Oliver company, becoming president in July, 1928, in succession to William J. Olcott.

□ □ □

Walter R. Collins, 73, retired superintendent of finishing mills of the Ohio Works of the Carnegie Steel Co., Youngstown, O., at Youngstown, June 29. For 31 years he had been employed by the Carnegie company, becoming superintendent of finishing mills in 1916 and retiring in May, 1931, under the new retirement provisions.

□ □ □

Frank E. Richardson, 71, president, Pittsburgh Forge & Iron Co., Pittsburgh, at Sewickley, Pa., July 10. He had been identified with the Pittsburgh company since 1879, becoming secretary in 1891 and president in 1909.

□ □ □

Charles W. Hanford, 59, for more than 20 years associated with the Ingersoll-Rand Co., New York. A native of Chicago, he was graduated from Harvard in 1897. He then was employed by the Pennsylvania railroad and later was associated with Spang, Chalfant & Co. Inc., Pittsburgh.

□ □ □

John M. Sweeney, 70, retired first vice president and controller, General American Transportation Corp., Chicago, and formerly identified with the auditing department of the Illinois Steel Co., July 15, in Gary, Ind.

□ □ □

Clifton D. Pettis, 63, former vice president, American Brake Shoe & Foundry Co., July 9, in New York. He was one of the organizers of the National Brake Shoe Co. in 1906, joining the American company in 1910. In 1928 he entered a similar business with his son.

□ □ □

Joseph Branson, 52, formerly Chicago structural engineer and inventor of the Branson system of concrete forms, July 9, at Monroe, La.

□ □ □

Burton C. Smith, 64, president, Smith Mfg. Co., LaCrosse, Wis., at Chicago, July 18. He was for many years an official of the LaCrosse Plow Co. and active in civic affairs.

□ □ □

Bolling H. Jones, chairman, Birmingham Stove & Range Co., Birmingham, Ala., at Atlanta, Ga., July 13. For many years he was president of the Birmingham company, following its organization in 1901, later removing to Atlanta where he became connected with the Atlanta Stove Works.

Financial News of Steel Industry

GULF STATES STEEL CO., Birmingham, Ala., shows net loss of $18,646, after charges, in the second quarter, compared with net loss of $93,481 in the first quarter and loss of $215,456 in the June quarter of 1932. The 6-month loss for Gulf States is $112,127, against $359,652 a year ago.

□ □ □

Harbison-Walker Refractories Co., Pittsburgh, reports net earnings in the second quarter of $247,700, compared with net loss of $206,200 in the first quarter.

Industrial Men in the Day's News

Frederick S. Blackall Jr., President, Taft-Peirce Mfg. Co.

IN addition to his new duties as president, he continues to function as general manager of the company.

SINCE 1922 he has been associated with the company, rising from foreman and metallurgist and branch office manager.

HE has been most active in association work, particularly that bearing on standardization and gage design.

FREDERICK S. BLACKALL JR. was elected president and treasurer of the Taft-Peirce Mfg. Co. of Woonsocket, R. I., manufacturer of precision tools and special machinery, at a meeting of the board of directors July 8. Mr. Blackall, who will continue as general manager of the company, succeeds in his new office the late Gordon Gordon, of New York, who died June 28.

Other officers newly elected at the recent meeting were John W. Wheeler Jr. of Bridgeport, Conn., vice president, and William A. Gordon III, of Pittsburgh, secretary.

Mr. Blackall has been associated with Taft-Peirce since 1922, holding successively positions as foreman and metallurgist, branch office sales manager, assistant to the vice president, assistant manager, secretary, and vice president and general manager, having been appointed to the latter office in 1928.

He is a graduate of Yale university, class of 1918, and the Massachusetts Institute of Technology, class of 1922. During the World war he served as an officer in the United States navy with the Atlantic fleet in American and European waters.

A member of the American Society for Steel Treating and the American Society of Mechanical Engineers, Mr. Blackall has been especially active in national standardization work. He is a past president of the Gage Manufacturers association, chairman of the technical subcommittee and the editorial committee and a member of the standing committee of the American Gage Design committee, chairman of technical committee No. 3 on machine tapers, member of the committee on standardization of small tools and machine tool elements, secretary of technical committee No. 17 on nomenclature, and a member of the committee on allowances and tolerances for cylindrical fits.

COL. O. F. HARVEY, assistant secretary of the American Car & Foundry Co., Berwick, Pa., has been elected vice president of the company.

□ □ □

Frank F. Slick, acting superintendent of the Edgar Thomson division, Carnegie Steel Co., Pittsburgh, was accorded a testimonial dinner at the Edgewood Country club, Pittsburgh, July 20, by the Braddock tri-borough district. I. Lamont Hughes, president, Carnegie Steel Co., and Snyder Dillon, vice president, attended.

□ □ □

Col. Frederick H. Payne, who as noted last week has returned to the Greenfield Tap & Die Corp., Greenfield, Mass., as chairman of the board, is returning to Greenfield to live and will devote his entire time to the affairs of the corporation. Colonel Payne and associates purchased a large block of common stock from interests which have been in control of the corporation since 1929.

Charles N. Stoddard continues as president and general manager.

□ □ □

Roger D. Prosser, of Thomas Prosser & Son, 15 Gold street, New York, is on a trip to Europe.

□ □ □

S. A. Taylor, consulting mining engineer, Pittsburgh, and an officer and director in several coal companies, has been elected president of the Carnegie Metals Co., Pittsburgh. The reorganization of the company is being considered by stockholders under a plan including an offering of rights and means to permit liquidation of bank indebtedness.

W. S. Linderman, formerly president, Duquesne National bank, Pittsburgh, has been elected treasurer of the Carnegie Metals Co., D. R. Frazier continues as secretary.

□ □ □

Sir Robert Hadfield, Bt., F.R.S., noted English steelmaker, has had conferred upon him the Decoration of Commendatore of the Order of the Crown of Italy, in recognition of his achievements in the metallurgical field.

□ □ □

John P. Ferris, formerly chief engineer, Oilgear Co., Milwaukee, has

(*Please turn to Page* 51)

EDITORIAL

Steel Code Is Masterpiece—A Credit to the Industry

THE code of fair competition submitted to the government by the iron and steel industry is an ambitious document. It is so comprehensive in scope, so specific in detail and so indicative of painstaking and conscientious effort on the part of its authors that those agents of the government who hinted that the steel industry was "stalling" in the preparation of its code now are forced to revise their opinions. It is a remarkable piece of work, and was put together in an incredibly short time.

It is difficult to grasp the full significance of the code in a single reading. One has to dig through a covering of legal verbiage to get down to pay dirt. But once the real meaning of the important provisions is grasped, one is impressed with the fact that the code goes far beyond the minimum requirements of the national industrial recovery act. In its references to labor relations, wages, hours of work, temporary moratorium on new productive capacity and certain rules of fair practice, it attempts to fulfill the primary objectives of the government's emergency legislation.

Attitude of Government on Steel Code Will Affect Progress of Recovery Program

Whether or not the administration will consider it satisfactory in this respect probably will not be known until the public hearing is well under way. As was to be expected, union labor spokesmen began to denounce the code within an hour after it had been filed in Washington. A few government officials—especially those who consistently attack every move of industry—predict that the provisions on labor relations will be found unsatisfactory. General Johnson, while noncommittal on the acceptability of the code, pronounced it a "good job" and expressed his appreciation of the "whole-hearted, patient and persistent effort on the part of the leaders of the industry to solve their internal problems."

The attitude of the government and recovery administrations to the steel industry's proposals may make or break the entire recovery program. Many industrial groups are looking to the steel code for clues as to what may or may not be included in their own codes. The public hearings, while dealing specifically with steel's problems, in reality will decide the issue for many large industries.

Beyond attempting to meet the needs of the recovery act, the authors of the steel code have made a courageous bid for important reforms in the merchandising of steel. Insofar as the code provides for more equitable relations between producer and consumer, it performs an important service long overdue in the steel industry. The approach to a single price policy, which it provides, is a step in the right direction which could have been, and should have been, taken without waiting for the pressure of an emergency situation to force it through.

Producers and Consumers Will Approve Attempt to Get Prices Out Into Open

The majority of interested producers and consumers will approve the uniform cash discount of one-half of 1 per cent, the ban on the shipment of certain products on consignment, the clarification of basing points and of methods of calculating delivered prices, the provision for uniform application of extras, the specification of terms of payment and credits common to all customers and numerous other constructive changes in practice.

Most of these reforms serve to strengthen the pricing policy of the industry against the iniquities of discrimination, favoritism and other destructive evasions of the past. They pave the way for the approach, ultimately, to an open, single-price standard.

No one would be justified in saying that the code is entirely fair and equitable in every detail. There are a number of provisions which, upon preliminary study, seem to afford loopholes for the continuance of unfair practices. Here and there are drastic changes which will benefit certain companies at the expense of others. Careful study will be required to insure that no interest is injured unduly and that none will be favored improperly.

For the present, it will be well to judge the code more on the basis of its intent than from the standpoint of its detail. Its objectives are unassailable. If serious inequalities are discovered, they can be corrected before actual harm is done.

In the main, the code is a masterpiece—a credit to its collaborating authors and to the steel industry.

THE BUSINESS TREND

Business Soon May Pause To Recheck Its Bearings

WHILE business continues to more forward and upward during a period of the year when a seasonal dullness normally prevails, there are faint signs of a leveling off of the trend line. Improvement in the major industries since the bank holiday has been so rapid that it was inevitable that somewhere in the uphill climb there would be a pause or slackening of pace.

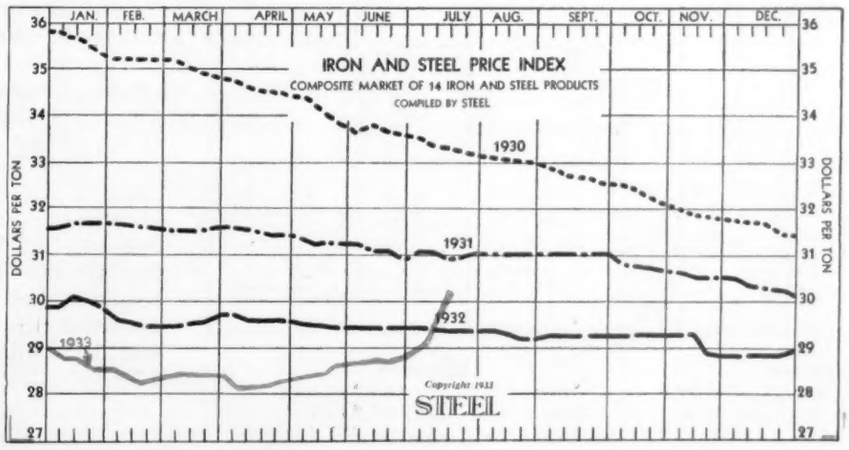
Whether the probable deceleration is due to the fact the busy industrial machine is catching up with the first wave of buying for urgent immediate needs, or whether it is due to a psychological urge on the part of business to take stock of its present position is an open question. Perhaps the easing off is due in part to both factors.

Supporting this speculation is the well known fact that much of the purchasing in the past three months has been for immediate needs. Some of it has been to replenish depleted inventories, and, in the last month purchases for speculative inventory have been increasing. However, few long-time projects, excepting those financed by the government, have been undertaken. The uncertain future of the dollar, and the attitude of the administration in refusing or delaying to reveal its policy in regard to stabilizing the dollar, make it impossible for business to make long-term commitments.

That uncertainties arising from this situation are viewed with increasing concern is evident in many authoritative quarters. The sound money element in Washington is puzzled and alarmed over the persistent talk about a commodity dollar. Surprising as it may seem, strong pressure for budgetary inflation exists to an extent which is giving responsible government officers many sleepness nights.

Uneasiness Indicates Desire of Business To See Future Path More Clearly

In view of this lack of definite policy, it is not surprising that uneasiness is developing in business and finance, notwithstanding the continued improvement in volume. We have been going forward with a huge experiment. Perhaps we should not carry it too far in blind faith, without first checking up on our bearings.

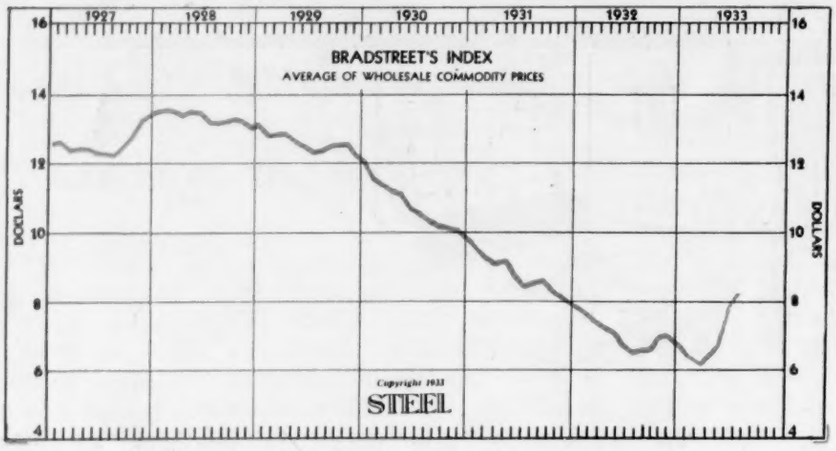


1933

July 15 ....$30.13
July 8 ..... 29.61
July 1..... 29.19
June 24.... 28.83

1932

July 16 ....$29.46
July 9 ..... 29.48
July 2..... 29.52
June 25.... 29.52



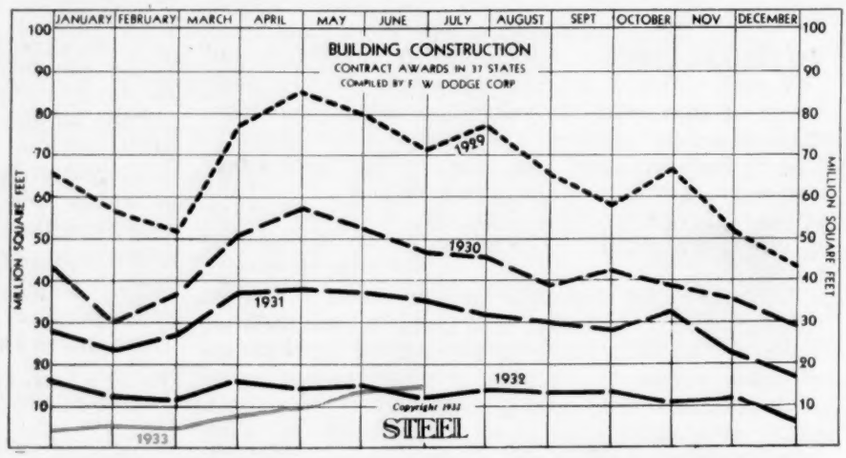
	1933	1932
July 1	$8.33	$6.68
June 1	8.02	6.92
May 1	6.98	7.15

Commodity Price Index Continues Upward

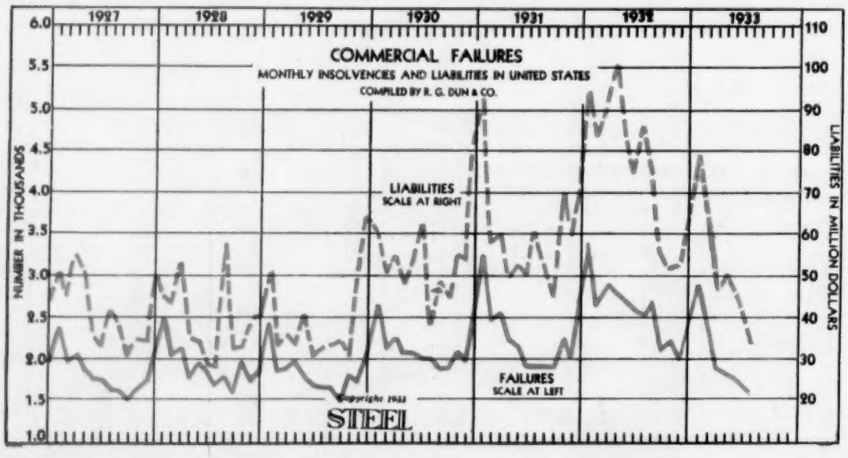
Bradstreet's index of commodity prices for July 1 showed a continuation of the upward trend. The index stood at $8.33, a gain of 3.9 per cent over the level of $8.02 on June 1. This is the fourth consecutive monthly increase since March 1—when the index dropped to a record low of $6.35—making a total gain during the four-month period of 31.2 per cent. The index figure for July 1 is the highest since Sept. 1, 1931 and is an increase of 23.9 per cent over July 1, 1932.

June Building Awards Gain; Valuations Up 34 Per Cent

Building awards in 37 eastern states, gained nearly a million square feet of new floor space during June. According to reports of F. W. Dodge Corp., total construction for June involved 16,199,500 square feet as compared with 15,277,000 in May and 12,295,700 square feet in June, 1932. The valuation of contracts awarded in June was $103,255,100, a gain of almost 34 per cent over the total of $77,171,700 shown in May.



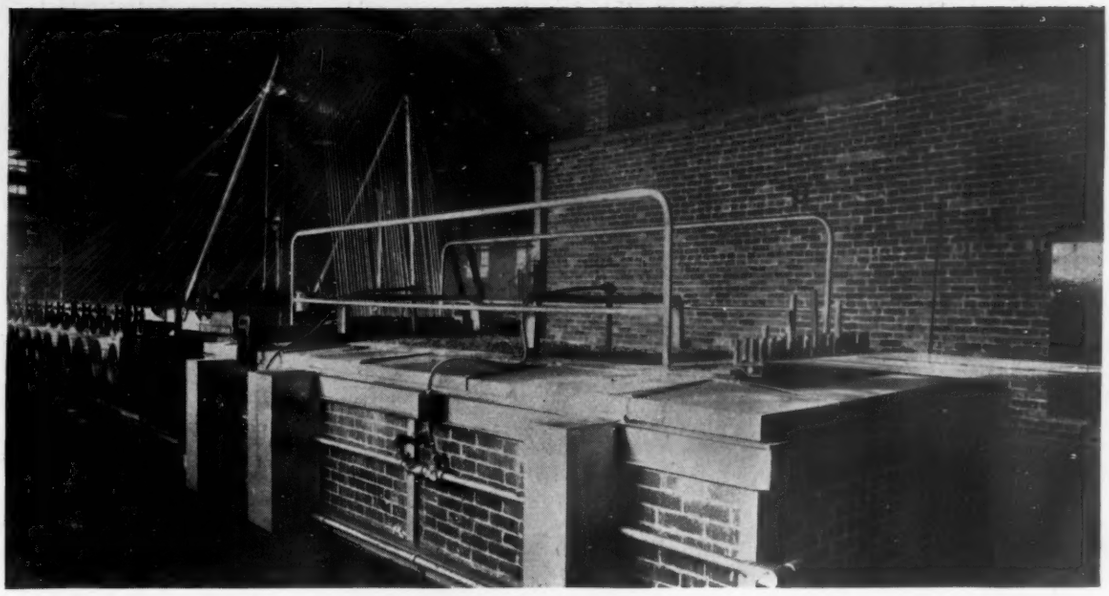
	Square Feet
June, 1933	16,199,500
May, 1933	15,277,000
June, 1932	12,295,700



Number		Liabilities	
June, 1933	1,648	June, 1933	$35,344,909
May, 1933	1,909	May, 1933	47,971,573
June, 1932	2,688	June, 1932	76,931,452

May Business Failures Lowest in Four Years

Commercial failures in the United States during June declined to the lowest level for any month in the past four years. According to Dun & Bradstreet Inc., failures totaled 1648 which compares with 1909 in May and 2688 in June a year ago. Liabilities in June were $35,344,909, the lowest indebtedness for that month since 1929 when the loss totaled $31,374,761. Liabilities in May totaled $47,971,573 and in June, 1932, $76,931,452.



Here is shown a neat installation of the Frost Steel & Wire Co., Hamilton, Ont., utilized for galvanizing steel wire. No. 20 flux technique is used. The manner in which the wire is passed through the kettle may be seen clearly

ELIMINATES DROSS AND REDUCES ZINC CONTAMINATION IN GALVANIZING

By W. H. SPOWERS JR.
Consulting Engineer, New York

THOSE concerned with the process of galvanizing have realized for a long time that one of the bug-bears, seemingly necessary, has been the formation of dross. It is known that dross is formed because zinc absorbs iron and that a small percentage of iron will contaminate large percentages of zinc. This contamination comes from four sources: First, from the work itself; second, from the sides of the kettle; third, from boiling dross; and fourth, from the use of active fluxes.

The writer decided to attack these problems individually and first to approach the active acid situation. We knew that by the use of active fluxes, such as muriatic, the situation was acute. First, we cleaned the scale from the work by either sulphuric or muriatic acid; then used the water wash; then we brought this clean material to a bath of muriatic. Muriatic was used on the theory that the clean condition of the work must be maintained until its immersion in the zinc and that the best protection for this was a flux wash, but, in the use of muriatic acid which is in itself a very active agent, we presented work to the bath coated with a heavy layer of iron salts which were very soluble in zinc.

The problem, therefore, was to protect the clean work as it came from the water wash but not to attach to it this heavy layer of iron salts. After much experimental work with various types of materials, a neutral flux of zinc chloride with proper acidulation seemed to be the answer.

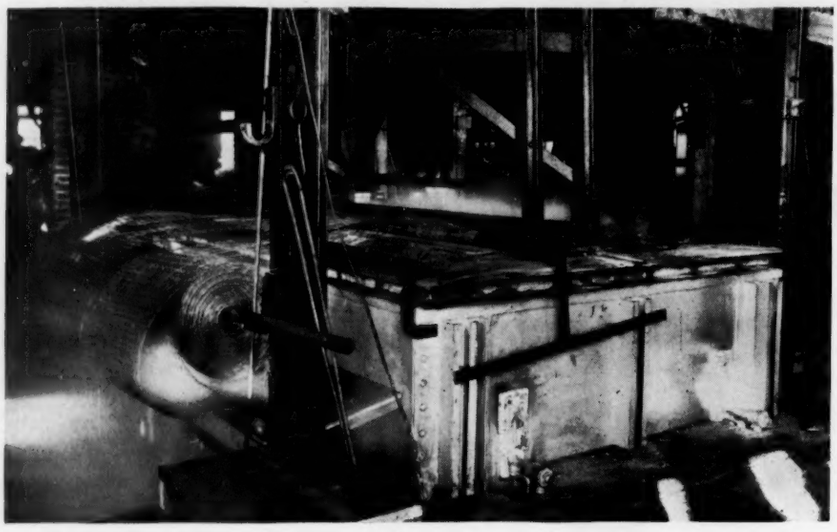
About this time the writer was called to a large range boiler plant in Tennessee because of what seemed to be an excessive dross accumulation in its operation. The muriatic tank was emptied and filled with the proper concentration of zinc chloride, properly acidulated, the sal ammoniac was dispensed with and the proper grade of zinc ammonium chloride substituted. Immediately, the dross in this plant was cut in half. This was the first practical application of the neutral flux technique.

It will be realized that when work is cleaned in dilute sulphuric acid, the result is accomplished because of the attacking ability of the acid on the steel submerged. When the work is removed from the sulphuric bath, it is of course covered with a layer of iron salts. These in usual practice are washed off in water. If the work then is washed with muriatic acid, which is in itself a more active attacking agent than is the sulphuric, the work must emerge from the muriatic with even heavier coatings of iron salts. When the work is immersed in the spelter, this layer of iron salts, being very soluble in zinc, rapidly contaminates the zinc and

forms dross in sizable quantities.

In cases where tight bond is required, these salts have the effect of materially thickening or widening the interlining alloy structure in a zinc coat and as it is this structure which, being brittle, causes the fracture upon bend, it will be seen that a thick interlining alloy layer results in disaster to the bond upon bending.

We know also that to produce a perfect bond in all forms of galvanizing it is necessary to present perfectly clean work to perfectly clean zinc. The technique in regard to presenting clean work free from these disastrous iron salts heretofore has been accomplished by the use of properly acidulated zinc chloride with the elimination of the muriatic acid, the zinc chloride being neutral in its action.



Poultry netting is galvanized in this kettle installed in the plant of Wickwire Bros., Cortland, N. Y. No. 20 flux technique is followed. The netting is rerolled as it leaves the kettle

Next then, we come to the problem of maintaining a clean surface of spelter through which the work is to be immersed. For many years this has been accomplished by the use of sal ammoniac. Sal ammoniac is the crystalline chemical ammonium chloride (NH_4Cl). When the sal ammoniac is thrown on the molten zinc, which is at 840 to 900 degrees Fahr., a large part of it is immediately volatilized and escapes into the air as a white fume and is lost. This characteristic of sal ammoniac, to volatilize readily, is at the same time the reason why sal ammoniac serves as a suitable flux.

Chloride Breaks Down

The first step in this volatilization is a breaking down of the NH_4Cl into NH_3 (ammonia) and dry HCl (hydrochloric acid) gas. These combine again and appear as the sal fume, familiar to all galvanizers. During the period when the sal is broken down, however, the dry hydrochloric acid (HCl) gas has an opportunity to attack any zinc oxide present on the surface of the molten zinc and also the molten zinc itself. This it does and forms complex zinc ammonium chlorides and zinc chloride.

This reaction is necessary and when the layer of fused chlorides is formed the fuming is less violent because this layer tends to retain any further additions of sal in solution. This whole process, while effective, is wasteful and has led to the author's efforts to produce an effective and more economical flux. It seems highly probable that but 30 to 40 per cent of the sal actually thrown on the kettle stays to do useful work.

Shop practice now is to save some of the flux left on the kettle at the end of a day's operation. This old flux is put on the kettle the first thing the following morning and new sal is added to this fusion.

It is also shop practice to add small amounts of sawdust, bran, oatmeal, tallow or glycerine to the sal before putting on the kettle or to add them to the fused flux on the kettle. These materials cause the fused flux to form a froth which is thick enough to eliminate fuming to a large extent and thus to economize in the use of sal. The froth may be as high as 6 or 8 inches and may differ in stiffness depending upon the requirements of the operation. The mixing of these frothing materials is not done to a formula, but is left to the judgment of kettle operators, a practice which leads to trouble.

A froth is essential in the operation because it contributes to a more satisfactory wetting or covering of the complete surface of the material entering the kettle to be galvanized. Preferably the material to be galvanized should be dry when put in the kettle to avoid dangerous steam explosions, but most continuous operations do not permit drying and a suitable frothy flux minimizes troubles of this nature. Unless the flux froth is kept in a very active condition by frequent additions of both sal and froth producer, it soon loses its effectiveness and, in fact, becomes unsatisfactory not only because of failure to secure proper galvanizing but also because the spent flux adheres to the work and causes black stains as it comes out of the kettle. This generally results in a second galvanizing to remove stains to put the work in condition for sale.

Double Salt Lowers Cost

In order to have a more perfect action with the use of zinc chloride as a flux wash, zinc ammonium chloride then was used for the volatile flux on the surface of the kettle. Zinc ammonium chloride is a crystalline compound of one of two possible formulas and may be looked upon as a material containing substantially equal parts of zinc chloride and ammonium chloride. In reality it is approximately the chemical which exists on the kettle in a molten condition after the fluid flux is formed when starting with sal ammoniac. Its advantage, therefore, lies in avoiding the heavy NH_4Cl losses met in forming a new flux from sal ammoniac and in maintaining the NH_4Cl somewhat longer in the molten flux. Since this material contains approximately 25 per cent zinc already, there is a further economy in its use since at equal price with sal ammoniac this zinc offsets the cost of the equal weight of the molten zinc otherwise required to form the same flux conditions when sal ammoniac is used.

The same frothing agents may be used and in the same way as with sal ammoniac. Zinc ammonium chloride at equal prices with sal is the cheaper and better material to use. As galvanizers operate in general, they do not obtain all of its advantages and look upon it as replacing sal pound for pound in their work. This viewpoint, however, is not correct.

It will be seen that in each of the methods, namely, muriatic with sal ammoniac or zinc chloride with zinc ammonium chloride, it is necessary to maintain two separate and distinct operations both of which are far from satisfactory. It was obvious that we must combine these two steps by some means in order to eliminate the great quantities of sal ammoniac or zinc ammonium chloride which necessarily must be added continuously to the top of the kettle for the purpose of maintaining the volatile flux. But at the same time we must retain in any event the clean surface and clean spelter procedure.

A special type of fluxing material

was perfected after many months of research and trial. This became known as No. 20 flux. This flux has been developed to meet the need for an efficient, constant flux which will not only create a satisfactory frothing most economically but will also provide the most stable and effective froth. Nothing in the flux will damage the work or the molten zinc in the kettle and there is no reason for workmen to observe any other personal safety precautions than they now follow in present practice.

This flux is a new development with the frothing agent self contained so that there is no need for the addition of bran, oatmeal, and the like. This means that the user is saved the expense of this material as well as the expense of warehousing and mixing it. It means that as he adds each pound of No. 20 flux he obtains a uniform and constant froth best adapted for his purposes. The user can provide himself with a flux froth that will meet his operating conditions best.

Shows 20 Per Cent Economy

This flux now is used in very substantial quantities and many factory tests have proved its suitability for the purpose for which it was developed. On a pound for pound basis, it shows an economy in use of 20 per cent over sal ammoniac when used in the customary way. There is less fume to annoy workmen and the froth is more stable and effective as a blanket and as a wetting agent on the incoming work. The reduction of the small explosions, or spitting, caused by wet work entering the kettle, can be eliminated completely by using a little care in building and maintaining the froth.

This material is suitable for all types of galvanizing, including wire and wire products where both the old fluxes have failed to suit. A serious objection to the use of bran, oatmeal and sawdust, to produce a froth is that they char readily and in many operations, such as galvanizing pipe, require skimming of the flux at frequent intervals to remove this char and prevent its carry-through on the work where it causes unsightly black spots. No. 20 flux will not cause this trouble under ordinary conditions.

Present practice on the materials to be galvanized and which have been pickled is to dip them in very dilute muriatic acid or a weak water solution of zinc chloride as a flux wash just before placing the material in the galvanizing kettle. This is an essential step and in most operations the material is still wet from this dipping when it is put in the molten spelter. Pipe, for instance, must be wet at this stage to facilitate the flow of flux and spelter through it.

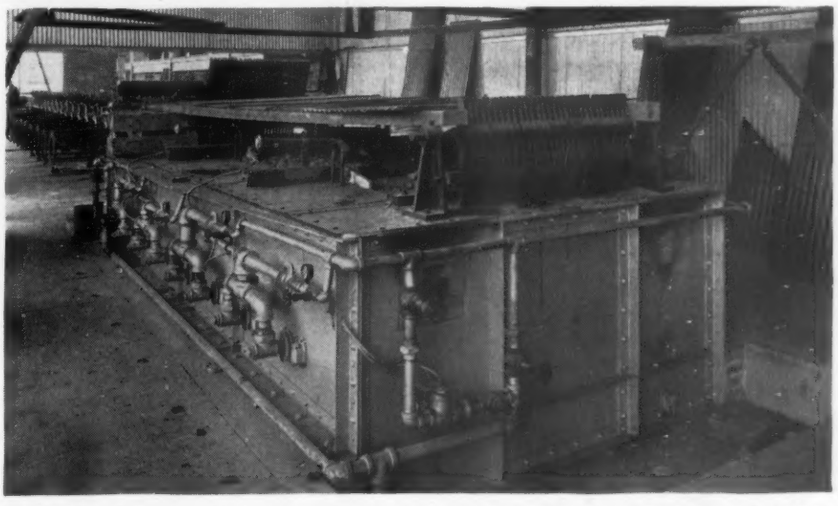
By this new procedure the flux may be dissolved in water to make a solution of suitable concentration which can be used to replace either the dilute muriatic acid or zinc chloride flux wash just described. This solution will serve the same purposes as these other flux washes and equally as well. The advantages in using the No. 20 flux solution is that besides performing the flux washing operation, it carries over into the molten zinc and either instantly creates a suitable flux froth in sufficient amount to serve all the purposes of the volatile flux or carries over such quantities as will reduce to a minimum the necessity for hand additions of the solid material.

The careful development of this technique, which so far as can be learned is new, will permit kettle operators to accomplish several desirable things. Since new flux is being introduced constantly by the incoming material to be galvanized, a minimum amount of flux would be used and used always at the place where it is really needed, that is, the place of first contact of the work with the molten zinc. Since this solution produces a frothy flux as soon as it touches the molten zinc, the present danger of spitting by work wet with either muriatic acid or zinc chloride can be eliminated. This reduces a safety hazard in the business and eliminates the loss of molten zinc which is thrown out of the kettle by this spitting.

If the work has been dipped in the No. 20 flux wash solution and then has dried before reaching the kettle all of the actual flux and froth producing materials originally in the solution of the work will be there in a dry form and will function as previously described. This technique is particularly attractive in its possibilities for better work and increased production with a reduction of rejections in the galvanizing of pipe and all hollow work where both inside and outside surfaces must be galvanized.

While, in general, this flux wash method will result in an economical use of the flux, in many operations it will possess other advantages which will outweigh the matter of economy in importance.

The present method of adding sal ammoniac to existing flux on the kettle to renew its usefulness is to throw it on by the scoop or shovel. This is extravagant, not only because the additions are generally excessive, but also because in many operations kettle areas are kept covered by active flux through which work to be galvanized seldom passes. By using the new technique, the flux is kept active constantly at the place where the work enters and the partially or fully spent flux is pushed back automatically to those areas where its function is merely to act as a blanket to prevent the formation of zinc ashes.

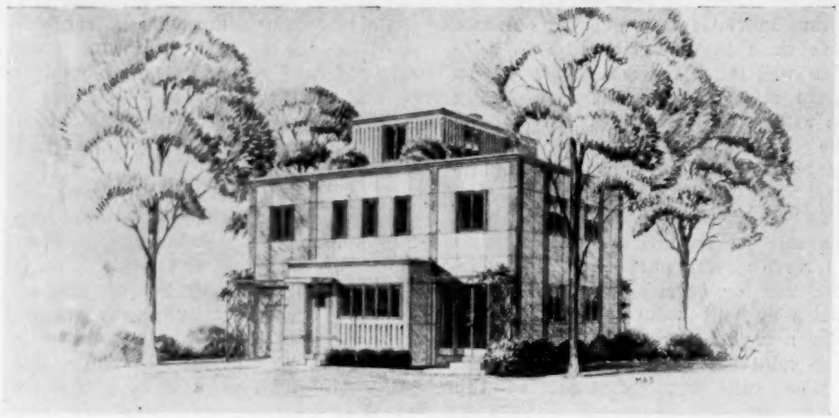


Galvanizing kettle installation of the Steel Co. of Canada, Hamilton, Ont. It is used for zinc coating steel wire and operates under No. 20 flux technique. This method of fluxing is particularly suitable for wire galvanizing

Additions Infrequent

It may be that operating conditions at the kettle may require some additions of the No. 20 flux in the solid form but this will be at comparatively infrequent intervals and in minimum amounts, thus avoiding or reducing the losses occurring by the present methods of adding flux.

In the final analysis, it will be seen that by this technique we have rid ourselves first of all the dross formed by the introduction of work coated by iron salts; second, we have reduced to a minimum the alloy layer structures in the zinc coat which normally cause fracture; third, we have eliminated in almost every instance the necessity of shoveling on great quantities of fluxing materials to the top of the kettle; and fourth, we have reduced two operations to one which is entirely uniform in technique.



Architect's conception of the prefabricated porcelain enamel steel house now being erected in Wheeling, W. Va.

Prefabricated Sections Used In New Steel Residence

A NEW type of steel house embodying prefabricated principles, the result of two years' study by its engineering and experimental departments, is announced by the Wheeling Corrugating Co., subsidiary of the Wheeling Steel Corp., Wheeling, W. Va.

Realizing that by fabricating sheet steel into definite forms, greater speed of production and quicker assembly of parts could be accomplished, the company designed this newest entry into the steel house field with the co-operation of Charles Bacon Rowley & Associates Inc., architects, Cleveland. The house is being erected in Wheeling, work having started June 26. Prefabricated units, including newly perfected steel wall and floor sections are being employed to achieve fireproof construction at reasonable cost.

Connections Are Welded

Foundation walls and footings are of customary masonry type. The basement will be under part of the structure but design is such that it may be eliminated without altering general arrangement. Fabricated sheet steel walls will be fastened firmly to a sill plate by welding and the sill plate will be anchored to the masonry. The sheet steel walls not only serve as structural members but provide a base or ground to which the outside and inside finishes are applied. Floors will be of sheet steel so fabricated that they may be laid quickly and produce a flat steel deck over which a wooden floor may be laid. All floor and wall connections will be arc welded. Inside finish of the walls and partitions will consist of plaster on metal lath supported by steel studs. Ceilings will be plastered on metal lath secured to the underside of the steel floor sections.

The outside surface of the residence will consist of steel sections, or plates, ½-inch deep, coated with porcelain enamel and filled with a fibrous insulation. Joints between the plates will be pointed with an elastic cement colored to blend with the porcelain enamel. For the first residence, the main body will be a medium, warm gray with certain panels shaded for decorative purposes. Pilasters are a dark, blue-gray and will project approximately ½-inch beyond the face of the wall so as to emphasize stability and to lend a desirable contrast in shadow. The reveals in the cornice will be a dark red and the steel window subframes will be a gray-green with sash painted white. The exterior plates will be enameled by the United States Stamping Co., Moundsville, W. Va.

The first floor consists of a living room, dining room, kitchen, heater room and laundry, and garage. The second floor will have four bedrooms and two bathrooms. A solarium on the third floor consists of two rooms which may be used for sleeping quarters, storage or studio purposes.

The stairway leading to the second floor will be of steel construction with wood treads and risers. A similar stairway leads from the second floor to the solarium.

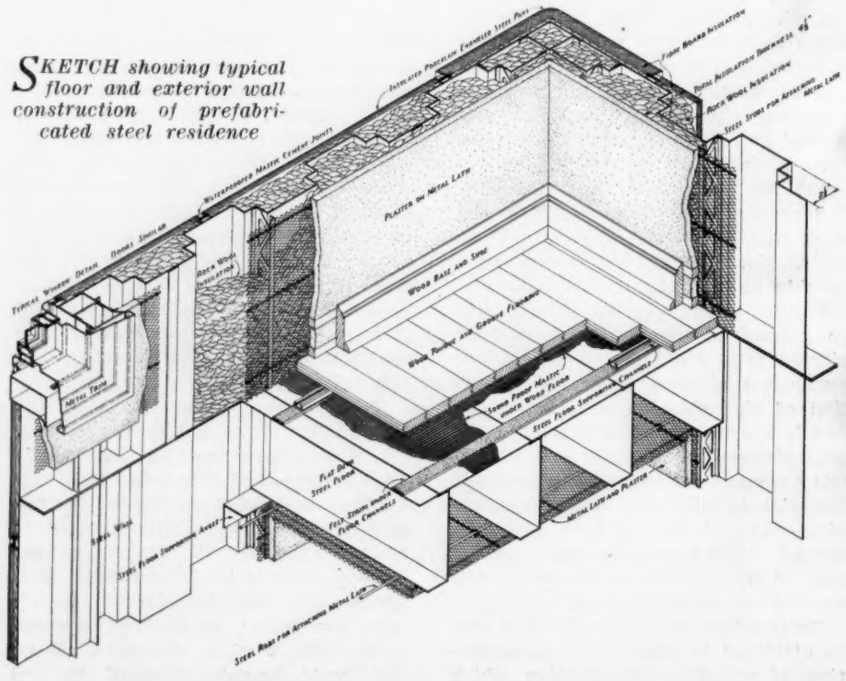
All Units Harmonized

Windows will be of heavy section steel, casement type with copper screens covering the entire opening and so arranged that the window may be opened or closed without disturbing the screens. All doors will be of wood and baseboards will be of wood with an enamel finish. Door frames, window frames and trim will be of steel and decorated with enamel to harmonize with the woodwork.

Due to the construction of the sheet steel walls, mineral or rock wool will be packed 4 inches thick so as to fill all voids. This wool will extend also over the ceilings directly under the roof. All wiring will be in steel conduit.

While the first residence will be constructed with a flat roof, the system permits of pitch roof construction when desired. The Wheeling

SKETCH showing typical floor and exterior wall construction of prefabricated steel residence



Corrugating Co. or other divisions of the Wheeling Steel Corp. manufacture practically every building product required for this new steel house construction, including pipe for plumbing, conduit, and the like, chief exceptions being the wood floors, wood trim, and plaster for walls and ceilings.

Steel Beer Barrel Has Two Shells

INCREASING popularity of steel beer barrels is indicated with the appearance of another type, the Duo-Steel barrel, introduced by the Motor Wheel Corp., Lansing, Mich., manufacturer of the widely used Centrifuse automotive brake drums and other automotive specialties.

The new barrel, shown partly in section in the accompanying illustration, is fabricated in two units—inner and outer—of open-hearth hot-rolled deep drawing strip steel, with carbon content varying from 0.08 to 0.12 per cent. In the manufacture, continuous arc welding is employed to join the component parts of which there are five. The inner unit is of two halves, welded together as a complete unit before the outer shell is assembled. The former is entirely independent of any welding done on the latter. Bung and tap fittings are next welded in, after which the unit is subjected to a 25-pound air pressure test while it is submerged in water.

The outer unit comprises two end sections and one middle belt section which is welded to the end sections. Both the outer surface of the inner shell and the inner surface of the outer shell are primed to prevent rust formation. The rims or chimes are reinforced by welding in a ¼-inch steel ring or hoop.

Air Provides Insulation

In shape the inner unit has been designed to lend maximum support to the outer shell. Contact points have been limited as much as possible to prevent excessive heat transfer and at the same time carry out the principles of truss construction.

Generous space is provided for air insulation between the shells. The manufacturer claims that next to a vacuum, dead air offers best resistance to heat transfer. Absence of insulation material also reduces weight and eliminates the danger of a saturated insulation in case of accidental leakage.

Using a carbon steel, the interior surface of course must be pitch lined. To provide an effective lining, the metal is given a rough sand blast treatment, after which it is coated with a special synthetic rust-

proof coating made from the same materials as the pitch which is applied later by the user. The first coating is colorless, odorless and tasteless. Moreover, it is said to dissolve immediately as soon as the pitch is applied, binding the latter to the roughened surface, yet presenting a smooth surface to the contents of the barrel.

Equipment is now set up to turn out as many as 500 of the barrels per hour. The same machinery as is used in the manufacture of brake drums is applied, since the depth of drawing is closely comparable.

Magnetic Inspection of Steel Described in Booklet

Methods and equipment used in the magnetic inspection of strip steel and wire are described in a 20-page booklet recently issued by the Ferrous Magnetic Corp., New York. This type of magnetic inspection, originally described in STEEL March 5, 1931, p. 39, is based on the comparative magnetic permeability of a standard sample and the material being tested.

There are two coil units in the apparatus, each having a primary and secondary winding. The standard sample becomes the core in one coil unit and the strip steel or wire becomes the core in the other coil unit as it passes through the opening of the coil. The secondary windings are opposed to each other and an oscillograph produces the instantaneous and visible record of the comparison by showing a straight line or sine wave with their variations. Inter-relationship of variations in the sine wave to defects in the specimen under inspection have been definitely and directly proved and interpreted.

Illustrations show a number of oscillograms from which comparative hardness, carbide segregation, inclusions, grain size, carbon content, surface decarbonization, abnormality and other qualities of a number of steel samples are deduced.

Discusses Advantages of Dolomite Refractories

Costs of using clinkered and calcined dolomite per ton of basic open-hearth steel are presented by Basic Dolomite Inc., Cleveland, in its newly published 25-page brochure, entitled "Dolomite Refractories," Data are presented to show that clinkered used in place of calcined dolomite accomplishes a reduction of the quantity of hearth refractories required, an increment in furnace efficiency because of low slag volume and less magnesia in the slag, lower furnace fuel consumption, greater furnace capacity per heat, longer life of acid refractories, and more latitude in the use of raw dolomite. The brochure aims to clarify the clinkered dolomite science and to establish standards by which to gage the relative value of dolomite refractories.

Interlocking Channel Floors Installed in Bridges

Installations of interlocking steel channel floors—an assembly of rolled structural steel channels or other shapes, placed alternately flanges up and flanges down, with the flanges interlocking and securely arc welded—are described and illustrated in a recently published 24-page booklet, compiled by the Belmont Iron Works, Philadelphia.

This type of floor, developed by engineers of the Belmont company, was first described in STEEL, Nov. 9, 1931, p. 34, and since that time a number of installations have been made, for decks of rail and highway bridges, pier decks, etc. The booklet also includes standard specifications suggested for the interlocking channel floor.

Light Weight Pipe Fittings Are of 10-Gage Steel

A new line of light weight pipe fittings, of 10-gage steel, for use with light wall piping and spiral pipe, has been announced by the Taylor Forge & Pipe Works, Chicago, in bulletin 33-5 recently issued by the company. The fittings are die formed and are furnished plain end or flanged, or flanged one end only. They are suitable for hydraulic pressures of 200 pounds per square inch, being tested to 50 per cent in excess of working pressure for which they are intended.

Making the Most of

METHODS AND MATERIALS

A STOVE manufacturer, confronted with rusting through of the galvanized pipe from the boiler to the chimney in his home, replaced it with a 20-gage low-phosphorus iron pipe porcelain enameled only with a ground coat. After 8 years service, the pipe still is in good condition. He also covered the window sills and cupboard shelves with vitreous enamel colored in the trim of the paint in the kitchen and bathroom and provided the fruit cupboard in the basement with acid-resisting enameled shelves. His company has furnished on request the first section of stove pipe in the same finish as the range. In this case, difficulty was experienced with crazing, as these pipe always were enameled in three coats. Where only ground coat is used, crazing is not excessive and service is increased appreciably.

$ $ $

Among uses of hard chromium plate are electrotypes and various kinds of printing plates and printing rolls; metal rolls and paper calender rolls in paper mills; guide strips for lathe and planer guides; feed screws for lathe tool carriages; screw machine cams and spindles; all wear parts on internal and centerless grinders to resist erosion of abrasive dust; parts which must resist heat, corrosion and erosion of water as in the rubber, textile, glass, paper, plastic, power and food industries; and on shaft bearings, where it is possible to get and maintain better alignment on account of reduced wear.

$ $ $

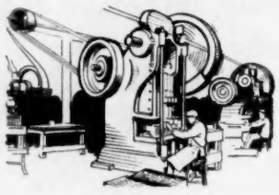
ZINC plate is a typical rust protective coating. No rusting takes place through pores in the coating as the zinc itself corrodes instead and protects the metal. Zinc is an extremely active metal chemically, and its sacrificial protection of the base metal often becomes rather severe on the coating itself. Unfortunately, zinc coatings do not possess a pleasing appearance and turn dirty gray within a short time. Various methods have been suggested to obtain the protective value of zinc and a more ornamental finish. The most satisfactory is the application of enamels, lacquers or japans over the zinc coatings.

$ $ $

Stainless steel recently has been finding increasing application as tubes in milking machines in dairies. Stainless steel now is used for a large variety of purposes in the dairy field, including tank trucks.

$ $ $

In deep drawing chrome-nickel stainless steels, a greater clearance can be used between the punch and the die than with mild steel. The reason for this is the difference in the flow of the metal as compared



with mild steel. A larger radius on the draw ring may be used, the radius depending upon the thickness of the metal, the speed of the press, the type of blank holder used and the shape of the piece.

$ $ $

In applications where variable-speed control of direct-current motors over a wide speed range is needed, the conventional method of control is to supply a motor-generator set and to vary the generator voltage. An electronic motor starter recently has been developed which provides the means for adjustable speed control of direct-current motors with an alternating-current supply source. The electronic motor starter is equipped with phase shift controlled grid glow tubes which are connected to supply armature voltage for the motor. A smooth armature voltage control during the entire range from zero to maximum is obtainable. The motor field is supplied with constant direct-current voltage by means of a pair of rectifier tubes. A desirable feature of this equipment is the automatic starting characteristic which limits the current during the starting period to a predetermined value. This type of starter may be used advantageously in applications where frequent speed adjustments are made and where a smooth starting characteristic is of importance.

$ $ $

WITH proper care, no great difficulties will be encountered in drilling chrome-nickel stainless steels except with the older types of electric hand drills, where it is impossible to reduce the speed. The high speed of these drills tends to build up temperatures very rapidly, burning the point of the tool. If the speed of the drill cannot be reduced, it is advisable to spot the drill before applying the power, and to make sure that when the power is turned on, pressure is being exerted so that the drill will cut. If the drill is allowed to make a few revolutions without cutting, it work hardens the steel and this may be sufficient to render drilling by this method impossible. When drilling deep holes, the use of a compound made up of 1 pound of sulphur to 1 gallon of lard oil will prove advantageous.

$ $ $

A foundry recently encountering porosity in small castings solved the difficulty through X-ray examination and changes in gating methods. Since a marked difference in weight was noted between the sand and porous castings, the company now weighs each casting as it passes through the inspection department to check against the return of the difficulty.

$ $ $

A rapid method of preparing polished specimens of iron for examination and photomicrography has been developed in the laboratory of one of the prominent automobile manufacturers. The time has been reduced to a few minutes for each specimen, and in addition the polishing operation does not tear out any of the graphite as in other methods practiced up to the present.

IMPROVING OPEN-HEARTH FURNACE DESIGN

BY WILLIAM C. BUELL JR.

Part VI—Open-Hearth Furnace Ends

(Forty-Second Article of Series)

THE first step in the design of an open hearth is the establishment of the bath capacity and dimensions and the rate of production. The second and most important step in the design is the ascertainment and development of the knuckle area A_2, for it is from this high critical area that the lines of the furnace will be evolved, and faulty design at this point is difficult to correct without a major redesign of the ends. It is imperative, therefore, that A_2 be established soundly. When functioning as the incoming end it should be desirable to develop this area smaller than ordinarily is found in conventional practice, a higher velocity here improving the firing condition, but when functioning as the outgoing end a much larger area would reduce the erosive effects of high velocity gases. As the area A_2 functions alternately as both the incoming and outgoing knuckle, compromise is necessary in both directions.

Range of Gas Velocity

Deductions may be drawn from the results of contemporary practice that the average maximum velocity of the furnace gases, considered as at 32 degrees Fahr., should in the case of producer gas firing fall within the range of 15 to 25 feet per second, as low as mechanical and combustion limitations will allow. The lower figure possibly marks the minimum at which sufficient turbulence is accomplished in the fuel and air supplies to produce satisfactory mixing for sufficiently rapid combustion. The higher figure while perhaps effecting better combustion, causes excessive erosion of the refractories in contracted areas.

Structural limitations tend to prevent the development of certain large size critical areas that would allow the maintenance of the desirable lower velocities. Great economy from producer gas firing is diminished severely by the large volumes of gas, air and the furnace gas required and developed in the release of the unit heat equivalent (see Table LV) and which reacts adversely throughout the furnace system.

Preheated mixed gas is subject to the same comments as producer gas excepting that the range of velocities through A_2 may be lowered 12.5 to 20 feet per second on account of the smaller volumes of the fluids required or developed for an equivalent heat release.

Other common fuels of high calorific concentration, natural and coke-oven gas, and oil and tar are fired through relatively large areas at A_2 at average velocities below 15 feet per second and preferably at not more than 10 feet per second.

How Chart Is Used

A chart, Fig. 61, has been developed for determining the proper area, A_2, from the tonnage to be produced and taking into account the probable fuel practice, the kind of fuel to be employed and the selected velocity. To use the chart, enter scale A with the average tons of steel to be made per hour and erect a vertical line to intersect the proposed fuel practice, curve B. A horizontal line to scale C will indicate the heat release. A vertical line erected from the intersection of the last horizontal and the full type curve D will give the furnace gas volume, scale E; and, if this line is continued to meet the appropriate velocity, curve F, a horizontal line to scale G will indicate the proper area A_2 for the conditions stated. The area, A_2, is based on the volume-density coefficient of 2.691 which is that of 3100 degrees Fahr. Two examples are shown, both starting with 17.5 tons per hour production. One example involves producer gas with a 17.5 foot per second velocity requiring an A_2 area of about 73 square feet, the other oil or tar with a 12.5 foot per second velocity

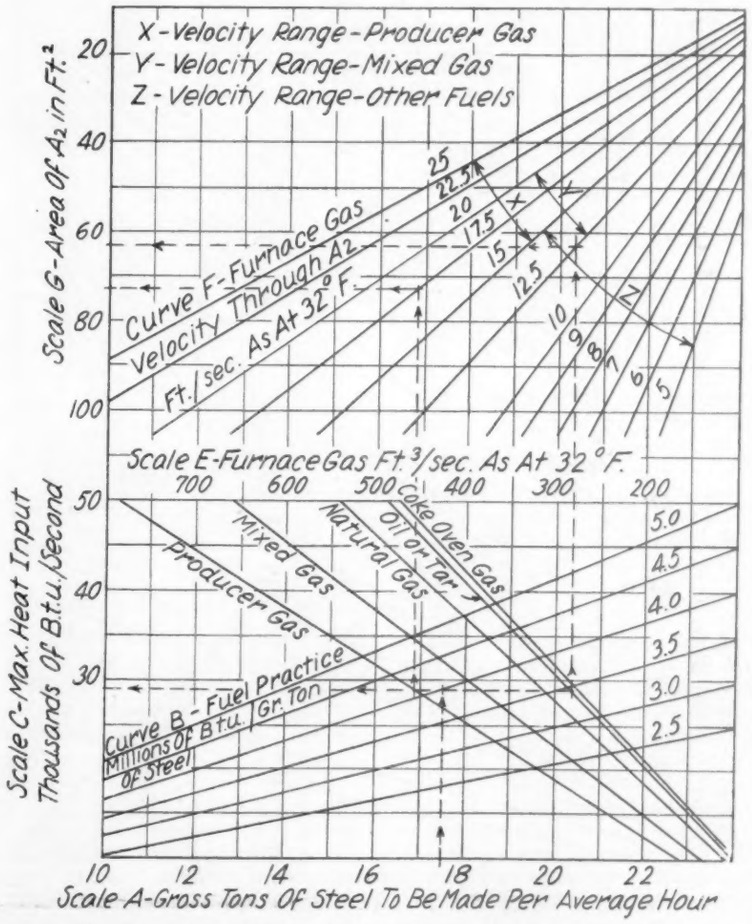


Fig. 61—Chart showing tonnage-knuckle area relationship

requiring about 63 square feet area at A_2.

The first location point to be established is the height of the junction of the end bank and the apron. Examination of Fig. 45 indicates that there is much difference of opinion as to what this dimension should be. In six of the cited furnaces the dimension is 9 inches or less; A, 5 inches; E, 9 inches; J, 6 inches; K, absent; M, 6 inches; and, P, 6 inches. Six are more than 9 inches and less than 18 inches; B, 13 inches; D, 12½ inches; H and I, 13½ inches; N and O, 10 inches. Four are more than 15 inches; C, 18 inches, F, 20 inches; G, 24 inches and L, 22½ inches. If the slope of the apron is considerable the dimension is not as important as though the slope is slight. However, 12 to 15 inches is a fair dimension that is used in several of the better working furnaces. It is believed the dimension here should be about the same for any method of firing.

Apron Slope Is Steep

In the furnaces now fired with producer or mixed gas or primarily designed for the use of these fuels, A, G, I, J, K, L and P, the slope of the apron is considerable, A is 1 : 6; G is 1 : 4; I is 1 : 3; J is 1 : 2; K is 1 : 3; L 1 : 5; N and O each are 1 : 6; and P is 1 : 2½.

While the idea underlying the steep slope is the directing of the fuel into intimate contact with the surface of the bath it has the added advantage of its draining action if the surface of the bath rises upon it during the boils. An apron slope of about 1:3 (20 to 22 degrees from the horizontal) may be classed a good design and adhered to unless there be excellent reasons other than that of prejudice for changing to another ratio.

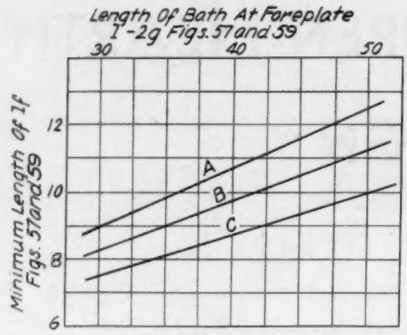


Fig. 62—Chart for determining the length of fuel throat necessary for short flame firing

The length of the apron from its junction with the end bank to its completion at the entrance end of the fuel port is of great importance.

An indication of the great variance of dimensions found in existing furnaces in this important design factor is given in Fig. 44 and Table LI. It is evident from the great variations found that this dimension usually has been arbitrarily named in the past. It is obvious that the length in this dimension will have a considerable effect on the resulting combustion.

Other factors remaining the same, the furnace with the longer throat will complete its combustion within a shorter distance on the bath surface.

The term, short flame firing, is indicative of a condition where combustion is complete before passing the middle door, and its accomplishment is much to be desired because this type firing when correctly accomplished will reduce fuel, increase production and lower furnace upkeep materially.

From an examination of the dimension from several furnaces in which short flame firing is accomplished successfully, the chart Fig. 62 is offered as a basis of establishing the length of the fuel throat.

The design necessary for the inclusion of the gas port, E, will vary with style of gas port used. There are several excellent gas ports on the market. The venturi port developed with water-cooled pipe coils finds extensive use.

The gas port shown in Fig. 57 is the Blair design which has a number of advantageous points chief among which are its simplicity, a basic design which permits its inclusion with almost perfect freedom from contact with the protecting brickwork, the ease of replacement if necessary and the ability to make some adjustment during operation if desirable. In the selection of the gas port size, its outlet area, A_2, is the governing factor. In any event, the nose of the gas port will be one of the elements of the furnace system that will absolutely require water cooling for its continued maintenance in the proper shape and area.

Basis of Selection

In accordance with the data of the chapter on furnace lines the gas port should be selected to pass one and one-half times the average fuel volume at a velocity not to exceed 60 feet per second with the gas fuel considered as at 32 degrees Fahr.

Most furnaces show the gas port installed with its center line parallel to the center line of the furnace. However, a few have the gas ports inclined slightly towards the front doors. The former method of installation probably is preferable. The minimum allowable area of the gas port nozzle is included in the data of Fig. 63.

(To be Continued)

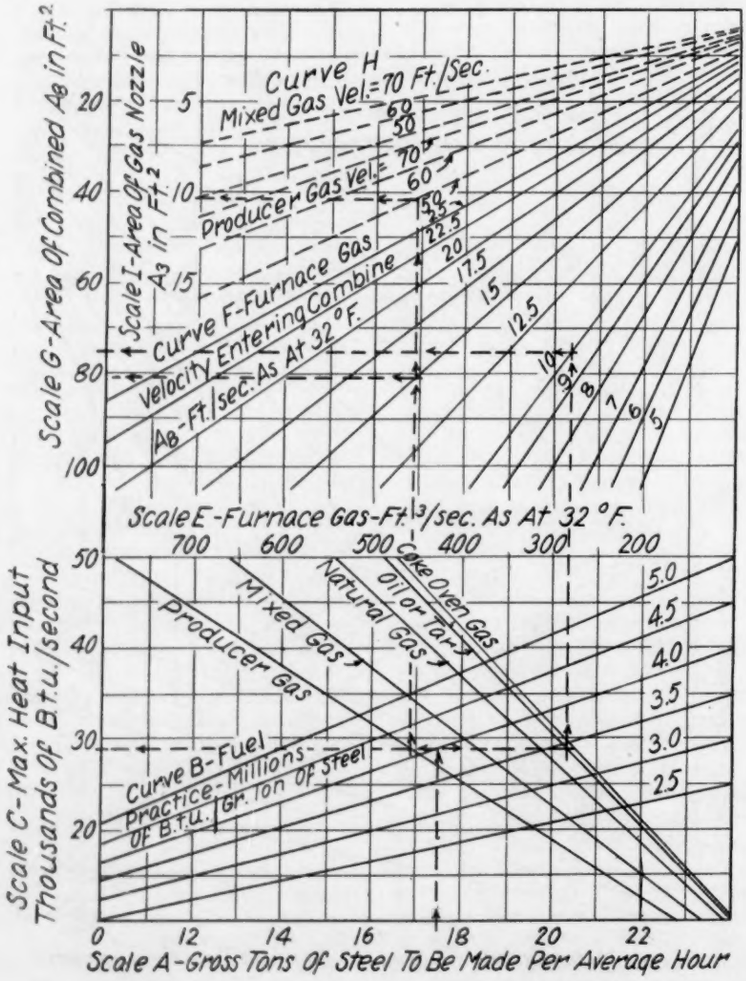
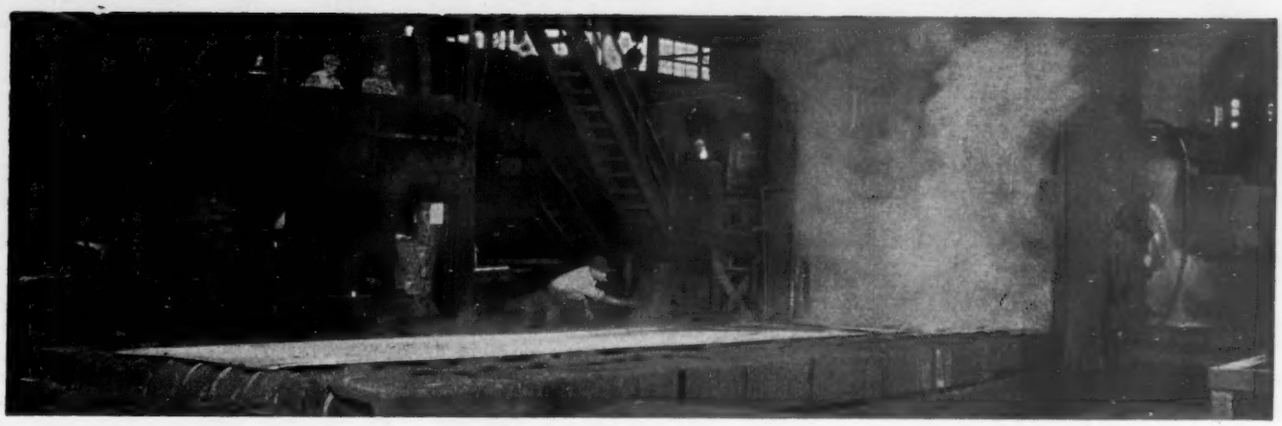

Scale G-Area Of Combined A_B in Ft.²
Scale I-Area Of Gas Nozzle A_3 in Ft.²
Curve H
Mixed Gas Vel.=70 Ft./Sec.
Producer Gas Vel.=
Curve F-Furnace Gas Velocity Entering Combine A_B-Ft./sec. As At 32°F.
Scale E-Furnace Gas-Ft.³/sec. As At 32°F.
Scale C-Max. Heat Input Thousands Of B.t.u./second
Mixed Gas
Producer Gas
Natural Gas
Coke Oven Gas
Oil or Tar
Curve B-Fuel Practice-Millions Of B.t.u./Gr. Ton Of Steel
Scale A-Gross Tons Of Steel To Be Made Per Average Hour

Fig. 63—Chart showing tonnage-downtake area relationship



PROGRESS IN STEELMAKING

LIME suitable for wire drawing according to a wire mill engineer, should analyze 95 per cent lime, 0.9 iron and aluminum oxides, 0.8 magnesium, 0.5 insolubles and 2.5 per cent carbonic acid. The lime before being applied to the rod should be slacked, screened and allowed to age.

SEVERAL steel companies actively are engaged in open-hearth furnace investigations and experiments which are expected to result in better heat distribution over the bath. Multiple burners have been tried by one company using present regenerators for preheating air. Firing open-hearth furnaces with air and gas in one direction would eliminate the necessity of reversing the flow of air and gas, thus making desirable a recuperator principle as a heat transfer agent. Numerous United States patents have been issued in the past two or three years covering ideas on one-way fired furnaces for melting steel.

♦ ♦ ♦

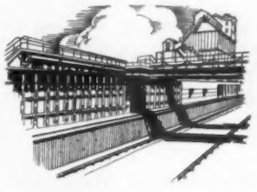
Elimination of orthodox ingot casting and blooming mill operations are made possible by the development of a new rotary process of steelmaking. An electric furnace of sufficient capacity is used to melt and refine all-scrap heats of 15 tons every hour. The metal is cast centrifugally into 7 x 7-inch annular blooms which are cut in arcuated sections, reheated and converted into billets on a conventional-type breakdown mill. On account of the method of casting, the yield of homogeneous blooms is about 98 per cent or higher compared with about 80 per cent in the case of blooming mill practice.

♦ ♦ ♦

Grease drippage from overhead cranes has been eliminated in the finishing department of a sheet mill by the installation of a full-automatic central pumping system which is synchronized with the operation of the crane. Each bearing is equipped with an adjustable valve through which a sufficient charge of lubricant is delivered at regular intervals. One pumping unit is actuated automatically from a trolley shaft and another from the line shaft on the bridge. Each pumping system is controlled separately and hydraulically and will start and stop with the crane.

♦ ♦ ♦

Circumferential cracks in steel ingots near the hot top frequently are traceable to molds which have been designed with an exceptionally heavy wall section, according to an open-hearth superintendent.



INCREASING the rate of heat transfer about 100 per cent without increasing the pressure drop in cooling systems at by-product coke oven plants has been effected by the development of coolers cast with internal ribbing and swirler fins. This arrangement on the interior of the cooling sections creates a turbulence and causes the transfer of a larger quantity of heat without increasing the velocity. The amount of heat extracted by the cooling water is unlimited inasmuch as the heat absorbing surfaces on the interior of the ribbed sections is larger than the dissipating surface on the outside. The possibility of sludge being deposited on the interior practically is remote on account of the scrubbing action of the swirling liquid.

HOT-ROLLED bars coming from the cooling bed of an Ohio merchant mill have a tolerance ranging from 0.002 to 0.003-inch compared with 0.007 to 0.008-inch for ordinary hot-rolled commercial rounds. The stock has an unusually high finish and is finding wide favor with makers of machine bolts.

♦ ♦ ♦

Closing the doors of hopper bottom cars without injury to the workman is afforded by the development of a new safety tool. The new device is adaptable to any car equipped with the wine or similar type of latch and eliminates the hazard of smashed fingers, strained backs and other injuries.

♦ ♦ ♦

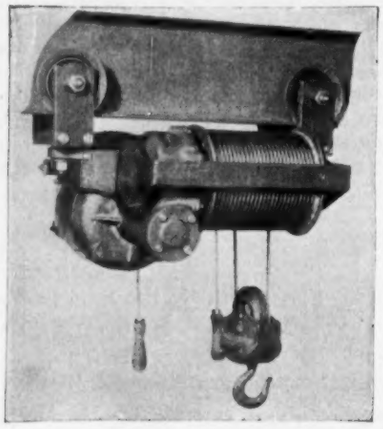
High heat transfer to liquid heat treating baths is afforded by immersion gas burners which fire through flue coils immersed at the bottom of the tanks. The flue coils are made of steel boiler tubes because of the conductivity of the metal. Enameled coils are employed in lead-lined tanks and acid-resisting alloy coils in tanks containing pickling solutions. Under normal operating conditions the overall efficiency of this type heating system is 75 to 85 per cent.

NEW EQUIPMENT

PRODUCTION FABRICATION TREATMENT FINISHING

Develops New Overhead Electric Hoist

Electro Lift Inc., 30 Church street, New York, has developed a junior model overhead electric hoist with a capacity of 500 pounds. This unit, shown herewith, may be equipped with top hook for rigid overhead suspension or it may be furnished with a plain trolley for use on any



Electro Lift overhead hoist has capacity of 500 pounds

monorail track. The junior model as well as the standard models with capacities of ½ to 5 tons have a single worm drive.

All parts are totally enclosed, gears and antifriction bearings operating in a bath of grease. Hoists are balanced at all loads, have steel suspension, and the motor brake and electric limit switch provide an automatic and positive stop to prevent overtravel of the hook at the top of the lift. Either rope control or pushbutton control may be furnished. These units are used for handling materials in foundries, machine shops, steel mills, warehouses, and for other industrial applications.

◆

Redesigns Rotating Cam Limit Switch

Cutler-Hammer Inc., Twelfth and St. Paul avenue, Milwaukee, has announced important changes in the design of its rotating cam limit switch for use with automatic feeder-catcher table control systems. To meet the need for greater precision on tilt table drives, the new design has split cams arranged in pairs to give any adjustment between 4 to 8 degrees on the shortest cam, to 180 to 360 degrees on the longest cam, without removing or cutting the cam. Other features of this limit switch include large bearing plates opposite the driving end, which permit the entire cylinder, as well as the pinion, to be removed without dismantling.

◆

New Power Fuse Has High Interrupting Capacity

Westinghouse Electric & Mfg. Co., East Pittsburgh, Pa., is offering a new De-ion power fuse for outdoor or indoor service with interrupting capacity up to 600,000 kilovolt-amperes. Three voltage ratings are available—7500, 15,000 and 23,000 volts. Such high interrupting capacity in power fuses not only extends the range of application of fuses to locations requiring heavier duties than formerly were possible but also opens up a new field usually referred to as requiring one-shot circuit breakers. Certain types of industrial loads fall in the latter class.

◆

Announces Addition of Six-Inch Idler to Line

Fairfield Engineering Co., 505 Barnhart street, Marion, O., has added to its line of idlers for belt conveying systems a Timken roller bearing idler of 6-inch diameter. These units are available in both troughing and return roller types, and are built for belt widths ranging from 14 to 60 inches.

◆

Arc Welder Is Mounted on Crawler Tractor

Universal Power Corp., 12367 Euclid avenue, Cleveland, has developed an all-weather crawler tractor-mounted arc welder. The welder, driven by the tractor engine, utilizes the shunt inductor principle of arc stabilization. This equipment consists of a standard universal welder carefully installed on a Cletrac crawler tractor to provide a mobile weld tool. Railroad and pipe line companies are finding this equipment particularly useful.

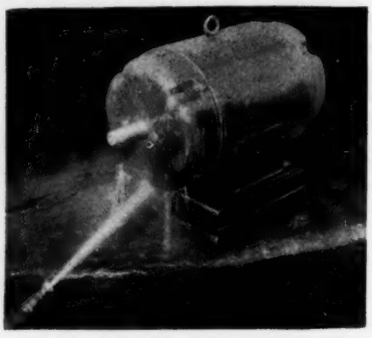
Self-Priming System Designed For Centrifugal Pumps

Pennsylvania Pump & Compressor Co., Easton, Pa., has developed a system for automatically priming centrifugal pumps. A small motor-driven rotary vacuum pump unit mounted on the centrifugal pump and arranged to evacuate the air in the pump and its suction line, is started either by pushbutton or remote control. Building up of normal pressure in the discharge pipe stops the vacuum pump, but should the pump lose its prime at any time it is stopped automatically, the vacuum pump started and the cycle of priming repeated. Suitable protective controls in the circuit prevent continual repetition of the priming cycle to a point injurious to the motors.

◆

Splash-Proof Design Is Feature of Motor

Ideal Electric & Mfg. Co., Mansfield, O., is marketing a new splash-proof motor, shown herewith, for applications in locations where water or other liquids may be splashed on the unit. The motor also is suitable for use where the equipment frequently is washed down with a hose as a stream of water striking the



Baffles in air ducts keep windings of Ideal motor dry

unit at any angle will not wet the motor windings.

Baffles placed in the air ducts remove spray from the air entering the motor and keep the windings dry. The motors are made in all sizes from 1 to 200 horsepower as squirrel-motors and meet all classifications of torque and inrush requirements.

Operating Rise Halts; Price Trend Still Up

Buyers Quiet Pending Clearing of Uncertainties—Bar, Shape, Plate Advance Believed Near—Big Spurt in Iron Ore—Foreign Iron and Spar Prices Up

A COMBINATION of circumstances, none of them inherently bearish, has leveled off steel production, and the unbroken rise since the last week of March, when the industry was at 14 per cent, was checked last week when the rate barely held at 57 per cent.

Releases against all contracts have now been largely worked off, and where higher prices are quoted—which is frequent—the incentive to commit further is lacking; automobile manufacturers are anticipating a slight seasonal letdown in August; wage and working conditions have become increasingly uncertain in view of NRA codes; the weak stock and commodity markets and Washington's warnings against overproduction have had a dampening effect.

An easier situation in July and August is nothing untoward in steel, and producers generally are disposed to appraise the present reaction as a technical one. There is growing apprehension in some quarters that the NRA program will interfere with the orderly working of economic laws, but the industry intends to co-operate and is basing certain fundamental policies on a long range view which is conservatively bullish.

For example, the United States Steel Corp. has decided to bring down 3,000,000 tons more iron ore this season, necessitating the commissioning of 40 additional ore carriers. This makes 211 out of 330 Great Lakes ore carriers in service, compared with 99 on June 15 and 76 a year ago.

Three blast furnaces—one Carnegie at Duquesne, one Hanna at Buffalo and one National Tube at Lorain—have been lighted, and the Brooke stack in eastern Pennsylvania is to be lighted Sept. 1. Detroit counts on the NRA program to shore up an automobile market in the fall at least equal to the May-June-July one. The naval, highway and public works programs are certain takers of steel in volume the remainder of the year. Equipment repairs by railroads, while placed in small lots, are surprisingly large in the aggregate.

A stalemate in heavy finished steel early in August is a possibility if producers adhere to their intention of adopting a one-price base, eliminating concessions for quantity, but any passive resistance of consumers is expected to yield to requirements stimulated by generally improved demand. However, specifications against heavy finished contracts the last week of July are expected to be heavy in anticipation of such a stand and will probably mitigate a shrinkage in specifications for sheets, strip and wire products.

Prices generally continue strong. As previously noted, heavy finished steel is tending higher. On small sales, the recent advances on strip are applied. New buying of wire products at higher prices is light but wherever a test is made producers are firm. Some sheet mills are extending their new levels through the third quarter, although one is refusing to book beyond July. A rise in bars, plates, shapes impends.

Cold-finished bar users are being urged to cover prior to a probable $5 increase. Importers of Dutch and Indian iron have kept step with last week's lift of $1 in domestic iron. Foreign fluorspar has been raised $2.50 in conformity with domestic material, while practically all foreign iron ores are higher.

Pig iron sales are quiet, following the advance of $1, but July shipments are exceeding June. Semifinished steel prices, especially on sheet bars, are expected to stiffen Aug. 1.

Warehouse prices are beginning to advance, reflecting the mill situation.

An arbitrary adjustment in the iron and steel composite of STEEL to correct a situation in sheets lowers this index to $30.02. The finished steel composite remains unchanged at $47.40, while the scrap composite is up 75 cents to $11.25.

Composite Market Averages

	July 22	July 15	One Month Ago June, 1933	Three Months Ago April, 1933	One Year Ago July, 1932	Ten Years Ago July, 1923
Iron and Steel Composite	$30.02	$30.13	$28.73	$28.16	$29.47	$45.39
Finished Steel Composite	47.40	47.40	45.30	44.94	47.71	68.33
Steelworks Scrap Composite	11.25	10.50	9.55	7.23	6.06	16.45

Iron and Steel Composite:—Pig iron, billets, slabs, sheet bars, wire rods, tin plate, nails, sheets, plates, shapes, bars, and black pipe. Finished Steel Composite:—Plates, shapes, bars, hot strip, nails, tin plate pipe. Steelworks Scrap Composite:—Melting steel, compressed sheets.

COMPARATIVE PRICES OF IRON, STEEL AND COKE

Representative Market Figures for Current Week, Last Month, Three Months and One Year Ago

	July 22, 1933	June 1933	April 1933	July 1932
Pig Iron				
Bessemer, del. Pittsburgh	18.26	17.26	16.26	15.76
Basic, valley	16.00	15.00	14.00	14.00
Basic, eastern, del. eastern Pa.	17.19	16.19	14.19	14.25
No. 2 foundry, del. Pittsburgh	17.76	16.76	15.76	15.76
No. 2 foundry, Chicago	17.00	16.00	15.50	15.50
*Southern No. 2, Birmingham	13.00	12.00	11.40	11.00
**No. 2X Virginia furnace	18.75	17.75	17.75	18.00
**No. 2X, Eastern, del. Phila.	17.63	16.76	14.51	14.76
Malleable, valley	16.50	15.50	14.50	14.50
Malleable, Chicago	17.00	16.00	15.50	15.50
Lake Superior charcoal, del. Chi.	23.04	23.04	23.04	23.04
Gray forge, del. Pittsburgh	17.13	16.63	15.63	15.63
Ferromanganese, del. Pittsburgh	87.24	73.24	73.24	73.24

*1.75-2.25 silicon. **2.25-2.75 silicon.

Delivered pig iron prices subject to 10 per cent freight surcharge, maximum 13.44c per gross ton, beginning Jan. 4, 1932.

Coke				
Connellsville, furnace, ovens	3.25	1.80	1.75	2.00
Connellsville, foundry, ovens	3.00	2.40	2.25	3.00
Semifinished Material				
Sheet bars, open-hearth, Youngs.	26.00	26.00	26.00	26.00
Sheet bars, open-hearth, Pitts.	26.00	26.00	26.00	26.00
Billets, open-hearth, Pittsburgh	26.00	26.00	26.00	26.00
Wire rods, Pittsburgh	35.00	35.00	35.00	37.00

	July 22, 1933	June 1933	April 1933	July 1932
Finished Material				
Steel bars, Pittsburgh	1.60	1.60	1.60	1.60
Steel bars, Chicago	1.70	1.70	1.70	1.70
Steel bars, Philadelphia	1.91	1.91	1.91	1.91
Iron bars, Chicago	1.65	1.65	1.65	1.65
Shapes, Pittsburgh	1.60	1.60	1.60	1.60
Shapes, Philadelphia	1.65	1.65	1.65	1.75
Shapes, Chicago	1.70	1.70	1.70	1.70
Tank plates, Pittsburgh	1.60	1.55	1.55	1.60
Tank plates, Philadelphia	1.54½	1.49½	1.49½	1.79½
Tank plates, Chicago	1.70	1.70	1.70	1.70
Sheets, No. 10 blue anneal., Pitts.	1.65	1.65	1.55	1.70
Sheets, No. 24, hot ann., Pitts.	2.25	2.10	2.00	2.20
Sheets, No. 24, galvan., Pitts.	2.85	2.70	2.65	2.85
Sheets, No. 10 blue anneal., Chi.	1.95	1.80	1.70	1.85
Sheets, No. 24 hot ann., Chicago	2.40	2.25	2.15	2.35
Sheets, No. 24 galvan., Chicago	3.00	2.85	2.80	3.00
Plain wire, Pittsburgh	2.10	2.10	2.10	2.20
Wire nails, Pittsburgh	2.10	1.85	1.85	1.95
Tin plate, per base box, Pitts.	4.25	4.25	4.25	4.75
Scrap				
Heavy melting steel, Pitts.	$13.75	11.65	9.90	8.35
Heavy melting steel, eastern Pa.	10.75	9.50	6.90	6.25
Heavy melting steel, Chicago	10.75	8.80	6.55	4.50
No. 1 wrought, eastern Pa.	12.25	10.25	7.35	6.25
No. 1 wrought, Chicago	10.35	8.10	5.50	4.60
Rails for rolling, Chicago	11.25	10.25	8.50	6.60

Sheets

Mills Busy on Backlogs—Some Makers Limit Prices to Third Quarter Delivery

SHEET PRICES, PAGE 35

Pittsburgh—At 60 to 65 per cent, sheet mill operations are at the highest point in several years. Activity is mainly on business booked late in June, although frequent spot inquiries demand rush shipment. Producers are not always able to meet delivery demands and on some grades delivery promises are three and four weeks. There have been some sizable orders from brewery container manufacturers for No. 10 blue annealed sheets, one recent commitment being for over 1000 tons at the full 1.65c base, Pittsburgh. Galvanized sheet users are unable to buy at less than 2.85c, Pittsburgh, and black sheets are moving at 2.25c. Cold-rolled prices are unsettled, due to a leading automotive account's price but on considerable business 2.15c and 2.60c, base, Pittsburgh, applies respectively on No. 10 and No. 20 gage auto stock. Producers are still having difficulty segregating speculative from genuine orders for sheets.

Cleveland—While some sheetmakers are quoting recently announced prices for all of third quarter at least one leading producer is limiting them to July, with no announcement of probable levels beyond this month. Buying of sheets is relatively quiet but not dull. Deliveries are somewhat delayed and mills have heavy backlogs. Automotive buying is expected to be heavier over the next week, as the month ends. Production and shipments continue at a high rate.

Chicago—Strong backlogs give producers reasonable assurance of heavy operations for five to six weeks. Indications of requirements of the automotive industry during August point to only a moderate decrease from current tonnage, which continues heavy, and in steady volume. Operations of the electric refrigerator industry are off moderately following heavy schedules over an extended period. Requirements of farm implement builders still are light and have shown little improvement. Miscellaneous sheet consumers are taking material in steady volume and mills are under considerable pressure to make delivery. Hot weather recently has interfered somewhat with rolling schedules. Prices are receiving little test, due to the decline in new business so far this month, with quotations steady at 2.35c, base, for hot-rolled annealed sheets and 2.95c for galvanized.

Boston—Larger users of sheets are taking shipments against old contracts in good volume, but new buying is light, covering miscellaneous needs without furnishing much of a test of the recently announced advances.

Philadelphia—The situation in sheets is still somewhat mixed, particularly in cold-rolled grades. While some sellers have not as yet changed their policy of quoting for specifications beyond the end of this month, certain others are quoting to the end of September, but with protective clauses. Although not to be compared with last month's releases, new business is still fairly brisk. Apollo Steel Co. has been awarded most of 1030 tons of sheets for the various navy yards.

Buffalo—Sheet mills continue at 70 to 75 per cent. No slackening of demand has appeared and mills have comfortable backlogs.

Cincinnati—Sheet mills extended present quotations, previously confined to deliveries to Aug. 15, for entire third quarter. Rolling schedules are close to 75 per cent, partly on the backlog built up last month, and

(*Please turn to Page* 52)

CURRENT FINISHED STEEL PRICES

Delivered prices subject to freight surcharge corrected to nearest ½c. Asterisk denotes price change this week

Sheet Steel

HOT ROLLED No. 10 (24 to 48 inches wide)

Pittsburgh, base	1.65c
Chi. dist. mills	1.75c
Chicago, del.	1.80c
New York, del.	2.00c
Birm., base	1.80c
Phila., del.	1.96c
St. Louis, del.	1.84c

HOT ROLLED ANN. No. 10

Pittsburgh, base	1.80c
Chi. dist. mills	1.90c
Chicago, del.	1.95c
Phila., del.	2.11c
New York, del.	2.15c
St. Louis, del.	1.99c
Birm., base	1.95c
San Fran., c.i.f.	2.27½c

HOT ROLLED ANNEALED No. 24

Pittsburgh, base	2.25c
Chi., dist. mills	2.35c
Chicago, del.	2.40c
New York, del.	2.60c
Phila., del.	2.56c
Birm., base	2.40c
St. Louis, del.	2.59c
San Fran., c.i.f.	2.90c

GALVANIZED No. 24

Pittsburgh, base	2.85c
Chi. dist. mills	2.95c
Chicago, del.	3.00c
Phila., del.	3.16c
New York, del.	3.20c
Birm., base	3.00c
St. Louis, del.	3.19c
San Fran., c.i.f.	3.50c

TIN MILL BLACK No. 28

Pittsburgh, base	2.50c
Gary, base	2.60c
St. Louis, del.	2.84c

MILL RUN COLD-ROLLED

No. 10

Pittsburgh, base	1.95c
Chicago, del.	2.10c
Philadelphia, del.	2.26c
New York, del.	2.30c

No. 20

Pittsburgh, base	2.40c
Chicago, del.	2.55c
Philadelphia, del.	2.71c
New York, del.	2.75c

AUTO. AND FURNITURE

Pittsburgh, No. 10	2.15c
Pittsburgh, No. 20	2.60c

ENAMELING SHEETS

Pitts., No. 10	2.40c to 2.45c
Pitts., No. 20	2.90c

Tin and Terne Plate

Per 100-lb. box, Pittsburgh

Tin plate, coke base, contract	$4.25
Do., stock	3.75
Long ternes, No. 24 unassorted	2.90c

Gary base, 10 cents higher.

Corrosion, Heat Resistant Alloys

Base, Pittsburgh

18% chrome, 8% nickel sheets, 35c; plates, 31c; bars, 28c.

	A	B	C	D
Bars	19c	20.5c	23c	28c
Plates	21c	22.5c	25c	30c
Sheets	26c	27.5c	30c	35c
Hot Strip	19c	20.5c	23c	28c
Cold Strip	25c	26.5c	29c	34c

Carbon 0.12 and under; no nickel. A has chrome 15% and under. B over 15/18% inc., C over 18/23% inc., D over 23/30%.

Steel Plates

Pittsburgh, base	1.60c
New York, del.	1.60c to 1.70c
Phila., del.	1.49½ to 1.59½
Boston, del.	1.72c to 1.82c
Buffalo, del.	1.85½c
Chicago, base	1.70c
Cleveland, del.	1.80½c
Birmingham, base	1.75c
†Coatesville, base	1.40c to 1.50c
Pacific Coast, c.i.f.	1.75c
St. Louis, del.	1.94c

†To Aug. 1; thereafter 1.70c.

Structural Shapes

Pittsburgh, base	1.60c
Philadelphia, del.	1.65c to 1.75c
New York, del.	1.77c to 1.87c
Boston, del.	1.90½c to 2.00½c
Chicago, base	1.70c
Cleveland, del.	1.80½c
Lackawan., base	1.70c
Birmingham, base	1.75c
Pacific Coast, c.i.f.	2.10c
Do., wide flange	2.20c

Bars

SOFT STEEL

Pittsburgh, base	1.60c
Chicago, base	1.70c
Birmingham, base	1.75c
Lackawan., base	1.70c
Pacific Coast, c.i.f.	2.00c
Cleveland, base	1.65c
Philadelphia, del.	1.91c
New York, del.	1.95c
Boston, del.	2.02c
Pitts., cold finish	1.70c
Pitts., forg. qual.	1.75 and 1.85c
San Fran., c.i.f.	2.10c

RAIL STEEL

Pitts., Buff.	1.50c
Chicago, base	1.50c
Eastern mills	1.50c

IRON

Chicago, base	1.60c to 1.70c
New York, del.	1.85c to 1.90c
Philadelphia, del.	1.81c to 1.86c
Pitts., refined	2.70c to 4.20c

REINFORCING

New billet steel, Chi., Pitts., Buff., Cleve., Birm. (cut lengths)	1.75c
Chicago, rail steel	1.50c
Phila., cut lengths	1.86c

Wire Products

(Prices apply on carload lots. Mixed carloads 10 cents higher; joint carloads up 20 cents; less carloads up 30 cents. Nail extras subject to 10 per cent discount on straight or mixed carload shiped to single consignee.)

F.o.b. mills, 100 lb. keg

Standard wire nails	$2.10
Cement coated nails	2.10
Galvanized nails	3.60

(Per pound)

Polished staples	2.80c
Galvanized fence staples	3.05c
Barbed wire, gal.	2.60c
Annealed fence wire	2.25c
Galvanized wire	2.60c
Woven wire fencing (base column, c.l.)	$55.00

(To Manufacturing Trade)

Plain wire, 6-9 ga	2.10c

Anderson, Ind., and Chicago, $1 over Pitts.-Cleve.; Duluth and Worcester, $2 higher; Fairfield, Ala., $3 higher.

Spring wire	3.10c

Chicago and Waukegan $1 higher, Worcester $2 higher.

Cold-Finished Bars

Base Pittsburgh, one size, shape, grade, shipment at one time to one destination

10,000 to 19,999 lbs.	1.70c
20,000 to 59,999 lbs.	1.65c
60,000 to 99,999	1.60c
100,000 lbs. and over	1.57½c

Chicago, Cleveland, Buffalo 5c higher; Detroit, 20c; eastern Michigan 25c.

Shafting

Cumberland, Md., base

1⅛-inch	3.00c
1 7/16 to 1½-inch	2.50c
1 7/16 to 1⅞-inch	2.20c
2⅛ to 6-inch	2.05c

Alloy Steel

Hot rolled, f.o.b. Pittsburgh, Buffalo, Chicago and Massillon, O. Base 2.45c to 2.65c. Differentials to various classes of consumers.

S.A.E.	Alloy Diff.	S.A.E.	Alloy Diff.
2000	0.25	3100	0.55
2100	0.55	3200	1.35
2300	1.50	3300	3.30
2500	2.25	3400	3.20

4100 .15 to .25 Mo.	0.50
4600 .20 to .30 Mo. 1.25-1.75 Ni.	1.05
5100 .80-1.10 Cr.	0.45
5100 Cr. spring	0.20
6100 bars	1.20
6100 spring	0.95
Cr., Ni., Van.	1.50
Carbon van.	0.95
9250 (flats)	0.25
9250 (rds., sq.)	0.50

Strip, Hoops, Bands

Hot-rolled strip up to 23 15/16-in. wide, Pitts.	1.60c to 1.65c
Do., Chicago	1.70c to 1.75c
Do., del. Phila.	2.01c to 2.06c
Do., del. N. Y.	2.05c to 2.10c
Cooperage hoop, Pittsburgh	1.75c
Do., Chicago	1.75c
Cold-rolled strip Pitts., Cleve.	2.25c
Worcester, 3 tons or over	2.45c

Rails, Track Material

Stand. rails, mill	$40.00
Relaying rails, Pitts., 20-45 lbs.	$22.50 to 25.00
50 to 75	$19.00 to 21.00
80 to 100	$23.00 to 24.00
Light rails, 25-45, mills	$30.00
Light rails, Chi.	$32.00
Angle bars, mills	2.55c
Spikes, R. R. mills	2.40c
Spikes, boat, b'ge, Pitts.	2.65c
Track bolts, Chi.	3.50c
Do., stand. job.	73 off list
Tie plates, Pitts.	$35.00
Tie plates, Chi.	$35.00

Rivets, Wrought Washers

Struc. c.l., Pitts-Cleve.	2.50c
Struc., c.l., Chi.	2.60c
7/16-in. & smaller, Pitts., Chi., Cleve.	70, 10 and 5 off
Washers, c.l., Pitts. dist.	7.35 off
* Do., Chi. dist.	7.00 to 6.75 off

Bolts and Nuts

Pittsburgh, Cleveland, Birmingham, Chi. Discounts to legitimate jobbing or large consuming trade for full-case lots, Dec. 1, 1932, lists.

CARRIAGE BOLTS

All sizes, cut thread	73 off
Rolled thread, ½ x 6 and smaller	73 off
Eagle list	73 off

MACHINE BOLTS

All sizes, cut thread, lag screws, plow bolts, Nos. 1-2-3-7 heads, tap bolts, blank bolts, stud bolts without nuts	73 off
Tire bolts	60 off
Stove bolts, 72½-25-10 off in pkgs.; 85 off in bulk, 5000 or more of a size.	
Rolled thread machine bolts, ½ x 6 and smaller, 73 off.	

NUTS

Semifinished	73 off

HEXAGON CAP SCREWS

Milled	85 off
Upset 1-in. diam., smaller	85-10 off

SQUARE HEAD SET SCREWS

Upset, 1-in., smaller	80 off
Upset, larger than 1-in.	80 off
Headless set screws	75-10 off

Cut Nails, Piling

Cut nails, Pitts.; (10% discount on size extras)	$2.65
Do., less carloads, 5 kegs or more; no discount on size extras	$2.90
Do., less than 5 kegs; no discount on size extras	$3.05
Steel piling, Pitts.	1.90c

Pipe and Tubing

Base $200 net ton, except on standard commercial seamless boiler tubes under 2 inches and cold drawn seamless tubing.

Welded Iron, Steel Pipe

Base discounts on steel pipe, Pittsburgh and Lorain, O., to consumers in carloads, Indiana Harbor, Ind., and Evanston, Ill., 2 points less. Chicago delivered, 2½ points less. Wrought pipe, Pittsburgh base.

All discounts are net.

BUTT WELD

Steel

In.	Blk.	Gal.
¼ and ⅜	57	38½
½	62	50½
¾	65½	55½
1—3	67½	58½

Iron

½	31½	15
¾	36½	20½
1—1¼	39½	25½
2	41½	26

LAP WELD

Steel

2	63½	54½
2½—3	66½	57½
3½—6	68½	59½
7 and 8	67½	57½
9 and 10	67	57
11 and 12	66	56

Iron

2	37	22½
2½—3½	38	25
4—8	40	28½
9—12	38	24½

(*Please turn to next page*)

LINE PIPE

Steel

⅛-inch, butt weld	50½
¼—⅜, butt weld	56
½, butt weld	61
¾, butt weld	64½
1—3, butt weld	66½
2-inch, lap weld	62½
2½—3, lap weld	65½
3½—6, lap weld	67½
7—8, lap weld	66½
9—10, lap weld	66
11—12, lap weld	65

Iron

⅛—1½ inch, black and galv. take 4 pts. over; 2½—6 inch 2 pts. over discounts for same sizes, standard pipe list. 8—12 inch no extra. 2-inch line discount unchanged from list prior to April 15, 1933.

BOILER TUBES

C. L. Discounts, f.o.b., Pitts.

Lap Weld Steel		*Charcoal Iron*	
2—2¼	33	1¾	8
2½—2¾	40	2—2¼	13
3	47	2½—2¾	16
3¼—3¾	50	3	17
4	52	3¾—3½	18
4½—6	42	4	20
7½	1	4½	21

On lots of a carload or more, above base discounts subject to preferential of two 5 per cent discounts on steel and 10 per cent on charcoal iron.

Lap Welded Steel—Under 10,000 pounds, 6 points under base and one 5 per cent; on 10,000 pounds to carload, 4 points under base and two 5 per cents. Quantity discounts, same as for hot rolled below. Charcoal Iron—Under 10,000 pounds; 2 points under base; on 10,000 pounds to carload, base and one 5 per cent.

STANDARD COMMERCIAL SEAMLESS BOILER TUBES

Cold Drawn

2—2¼	27	3¼—3½	44
2½—2¾	34	4	46
3	41	4½, 5, 6	36

(On 1—1¾-inch sizes mechanical tubing discounts apply.)

Hot Rolled

2—2¼	33	3¼—3½	50
2½—2¾	40	4	52
3	47	4½, 5, 6	42

Quantity discounts are: Under 10,000 pounds, 10 points and 5 per cent; 10,000 to 24,999 pounds, 6 points and 5 per cent; 25,000 pounds to carload, 2 points and 5 and 5 per cent; carload and over, base discount and 5 and 5 per cent. No extra for lengths up to and including 24 feet. Sizes smaller than 1 inch and lighter than standard gage to be held at mechanical tubes list and discount.

Seamless Tubing

Cold drawn; f.o.b. mill disc.

100 ft. or 150 lbs. 40%
15,000 ft. or 22,500 lbs. 70%

Cast Iron Water Pipe

Class B Pipe—Per Net Ton

6-in. & over, Birm.	$35.00-36.00
4-in., Birm.	38.00-39.00
4-in. Chicago	46.40-47.40
6 to 24-in. Chicago	43.40-44.40
6-in. & over, N. Y.	32.00-34.50
4-in. New York	34.50-36.50

Class A pipe $3 over Class B. Stand. fitgs., Birm. base $90.00

Six to 24-inch, fittings, base; over 24-inch plus $20; 4-inch, plus $10; 3-inch, plus $20; gas pipe fittings, $5 higher.

RAW MATERIAL PRICES

Delivered pig iron prices subject to 10 per cent freight surcharge, maximum 13.44c gross ton, from Jan. 4, 1932, except Buffalo del. at Boston. Asterisk denotes price change.

Pig Iron

Per Gross Ton

FOUNDRY NO. 2

Chicago, furnace	$17.00
Pitts., dist. fur.	17.00
Pittsburgh, del.	17.63-18.13
Valley furnace	16.50
Cleve. fur., loc. del.	16.50
Philadelphia, del.	17.26
Virginia furnace	17.25
Granite City, Ill.	17.00
St. Louis, del.	17.85
Buff., fur., local del.	17.00
Buff., all-rail. Bost.	20.05
Buff., del. Brook.	18.77
Buff., del. Newark.	17.89
Ala., Birmingham.	13.00
Ala., del. Chicago.	17.16
Ala., del. St. Louis.	17.35
Ala., del. Cincinnati	17.51
Ala., Phila., dock	18.00-18.25
Ala., Balt., dock del.	18.00
Ala., N. Y. dock	18.50
Ala., Bost. dock del.	18.50-18.75
Tenn., Bir. base	14.00
Tenn., del. Cinci.	17.51
Montreal, del	22.00
Eastern, del. Phila.	17.76

FOUNDRY NO. 2X

Buff., fur., local del.	17.50
Buff., del. Brook.	19.02-19.27
Do., Newark	18.14-18.39
Buff., all-rail, Bost.	20.55
Virginia furnace	17.75
Eastern, del. Phila.	17.51-17.76

FOUNDRY NO. 1X

Buff., fur., local del.	18.00
Eastern, del. Phila.	18.01-18.26
Buff., del. Brook.	19.52-19.77
Buff., del. Newark.	18.64-18.89

MALLEABLE

Valley furnace	16.50
Cleve. fur., loc. del.	16.50
Pittsburgh dis. fur.	17.00
Pittsburgh, del.	17.63-18.13
Chicago, furnace	17.00
Buff., fur., loc. del.	17.50
Eastern Pa., del.	18.13-19.91
Granite City, fur.	17.50
Montreal del.	22.50
Toronto, delivered	21.00

BASIC

Pitts., dist. fur.	16.50
Pittsburgh, del.	17.13-17.63
Eastern Pa., del.	17.00-17.25
Buff., fur., loc. del.	16.50-17.00
Montreal, del.	22.00
Valley, furnace	16.00

BESSEMER

Valley furnace	17.00
Pittsburgh fur.	17.50
Pittsburgh, del.	18.13-18.63

LOW PHOS.

Valley fur. stand.	25.00
Phila., standard	23.76-27.79
Copper bear., E. Pa. furnace	23.00-24.00

GRAY FORGE

Valley furnace	16.25
Pitts., dist. fur.	16.50
Pittsburgh, del.	17.13-17.63

CHARCOAL

Lake Sup., del. Chi.	23.04

SILVERY

Jackson County, O., or Pittsburgh furnace; 6%—$20; 7—$20.50; 8—$21.00; 9—$21.50; 10—$22; 11—$23.

BESSEMER FERROSILICON

Jackson County, O., or Pittsburgh furnace: 10%—$23; 11—$23.50; 12—$24.00; 13—$24.50; 14—$25.00; 15—$25.50; 16—$26.00.

Iron Ore

LAKE SUPERIOR ORE

Gross ton, 51½%, Lower Lake Ports

Old range bess.	$4.30
Mesabi bessemer	4.65
Old range nonbess.	4.65
Mesabi nonbess.	4.50
High phosphorus	4.40

EASTERN LOCAL ORES

Cents, unit, del. E. Pa.

*Foundry and basic, 56-63%, con. (nom.)	8.00- 9.00
*Cop.-free low phos. 58-65% (nom.)	10.00-10.50

FOREIGN ORE

Cents per unit, f.a.s. Atlantic ports (nom.)

*Foreign manganiferous ore, 45-55% iron, 6-10% man.	8.50
No. Afr. low phos.	7.00
*Swedish basic, 65%	8.00
*Swedish low phos.	8.50
Spanish, No. Afr. basic, 50 to 60%	7.00
Tungsten, spot, sh. ton unit, duty pd.	$10.75-11.00
N. F. fdy., 55%	7.00
Chrome ore, 48% gross ton c.i.f.	$16.50-17.50

Manganese Ore

(Nominal)

Prices, not including duty, cents per unit, cargo lots.

*Caucasian, 52-55%	20.00
*So. African, 52%	20.00
*So. Afr., 49-51%	18.00-19.00
Indian, 48-50%	nominal

Refractories

FIRE CLAY BRICK

Per 1000 f.o.b. Works

First Quality

Pa., Ohio, Ill., Ky., Md., Ga., Mo.	$40.00
Alabama	43.00

Second Quality

Pa., Ohio, Ill., Ky., Md.	35.00
Missouri	35.00
Georgia, Alabama	35.00

MALLEABLE BUNG BRICK

All bases	45.00

SILICA BRICK

Pennsylvania	$40.00
Joliet, E. Chicago	49.00
Birmingham, Ala.	50.00

MAGNESITE BRICK

Per Net Ton, 9 x 4½ x 2½

Burned	$65.00
Unburned	55.00

CHROME BRICK

Per Net Ton

F.o.b. ship. point	$45.00

MAGNESITE

Dead burned grain, Chester, Pa., Baltimore bases, net	40.00
Domes, Chewelah, Wash., base	22.00

Fluorspar

85 to 5 per cent grade

*Washed gravel, duty paid, tide, gross ton	$20.00
Washed gravel f.o.b. Ill., Ky., net ton, carloads	$14.00

Semifinished Steel

Prices Per Gross Ton

BILLETS AND BLOOMS

4 x 4-inch base

Pitts., Chi., Cleve., open-hth. & bess,	$26.00
Philadelphia	31.75
Forging, Pitts., Chi.	31.00

SHEET BARS

Pitts., Cleve., Yong.	26.00
Chicago	26.00

SLABS

Pitts., Cleve., Yong.	26.00

WIRE RODS

Pitts., Cleveland	$35.00
Chicago	36.00

SKELP

All grades, Pitts.	1.60c

Coke

Price Per Net Ton

BEEHIVE OVENS

*Connellsville fur.	$3.00- 3.25
*Connellsville fdry.	3.00- 3.50
*Connell. prem. fdry.	4.00- 4.50
New River fdry.	6.00
Wise county fdry.	4.25- 5.00
Wise county fur.	3.50- 4.25

BY-PRODUCT FOUNDRY

Newark, N. J., del.	8.21- 8.81
Chi. ov., outside del,	7.50
Chicago, del.	8.25
New England, del.	10.00
St. Louis, del.	7.75
Birmingham, ovens	4.00
Indianapolis, del.	8.25
Ashland, Ky., ovens, Connell., basis	5.00
Portsmouth, ovens, Connel. basis	5.00
Buffalo, ovens	7.50- 8.00
Detroit, ovens	8.00
Philadelphia, del.	8.50

Ferroalloys

(In dollars, except Ferrochrome)

Ferromanganese, 78-82% tidewater, duty pd.	82.00
del. Pitts.	87.24
Spiegeleisen, 19-20%, dom., fur., spot†	27.00
Ferrosilicon, 50%, frieght all., c. l.	74.50
Do, less carload	82.50
Do, 75 per cent	120-130.00
Spot, $5 a ton higher.	
Silicomang., 2½ carb.	85.00
2% carbon	90.00
1% carbon	100.00
Ferrochrome, 66-70 chromium, 4-6 carbon, cts. lb. con. del.	9.50
Do, spot del.	10.00
Ferrotungsten, stand., lb., cont.	0.94- 1.00
Ferrovanadium, 35 to 40%, lb. cont., on analysis	2.60- 2.80
Ferrotitanium, c.l., prod. plant, frt. allow., net ton	137.50
Spot, 1 ton, frt., all., lb.	8.50
Do, under 1 ton	9.00
Ferrophosphorus, per ton, c. l. 17-19%, Rockdale, Tenn., basis; 18%, $2 unitage	50.00
Ferrophosphorus, electrolytic, per ton c. l., 23-26% f.o.b. Anniston, Ala., 24%, $2.75 unitage	65.00
Ferromolybdenum, stand. 50-60%, lb.	0.95
Molybdate, lb. cont.	0.80

†Carloads. Diff. to apply to quantity.

Bars

Buying Slightly Less but Shipments Continue Heavy—Prices Show Much Strength

BAR PRICES, PAGE 35

Pittsburgh—Merchant bar buying was somewhat less last week. A slight decline in specifications by miscellaneous manufacturers is noted. The automotive industry is fairly steady in its specifications but a slight down-trend is noticeable. This has affected both carbon and alloy bars. An unconfirmed report predicts an advance soon in hot-rolled products of about $5 a ton.

Cleveland—Buying of soft steel bars has eased, but production and shipments hold at a high rate. Delivery now is 10 days to three weeks in the case of several important producers. This is in contrast to recent delivery conditions. Preferential prices terminate July 31 and 1.65c, base, Cleveland, then will apply on all third quarter business.

Chicago—Steel bar shipments continue heavy, finding little reflection from the decline in new business so far this month. Sales and specifications are lighter but mills have fairly substantial backlogs and expect to continue present operations and shipments into August. While operations of farm implement manufacturers have increased only moderately and are supported to a large extent by demand for repair parts, officials are more hopeful. Soft steel bars continue 1.70c, Chicago.

Boston—Commercial steel bars are firm at 1.60c, Pittsburgh, preferential tonnage under that price to be shipped by mid-August while business taken after this month will be at 1.60c, Pittsburgh, to all buyers.

New York—Demand for commercial steel bars is irregular but improvement is expected over the remainder of the month with concessions under 1.60c, Pittsburgh, scheduled to be eliminated.

San Francisco—Pacific Coast Steel Corp. and Bethlehem Steel Co. have been awarded about 600 tons of steel bars for the navy, mostly medium black. Most cold-rolled machinery bars included in schedule 264, opening July 5, went to Columbia Steel & Shafting Co. and Keystone Drawn Steel Co.

Cold-Finished Orders Less But Shipments Are Larger

Cold Finished Prices, Page 35

Pittsburgh—Buyers of cold-finished steel bars have been urged to enter their specifications at the present base price of 1.70c, Pittsburgh. This is in view of the fact that a report has been widely circulated that cold-finished bars will be advanced $5 a ton shortly to 1.95c, Pittsburgh. The rate of shipments so far this month has been in excess of the first three weeks of June but orders have been somewhat less.

Tin Plate Output Easing

Tin Plate Prices, Page 35

Pittsburgh—Tin plate producers are scheduling no more than 16 turns weekly, representing a decline of one and two turns from the extra turns scheduled previously. However, at 16 turns, the industry is operating at theoretical capacity. Tin plate producers are booked up into mid-October and are turning down some open market inquiries for tin plate as well as black plate. Specifications from can makers still are pressing heavy volume. The price situation is strong with tin mill black the firmest in many years at 2.50c, Pittsburgh and tin plate at $4.25 per base box.

Mekeel Engineering Co., 1675 South Forty-third street, Milwaukee, has been organized by V. C. Mekeel, formerly superintendent of the Chicago plant of the Sivyer Steel Casting Co., to represent manufacturers of excavators, cranes and other products.

Plates

Tanks Give Most Tonnage as Heavier Lines Lag—Some Car Repair Needs Come Out

PLATE PRICES, PAGE 35

Pittsburgh—Railroad repair shops have been heavier buyers of plates, but only in small miscellaneous lots. Several important tank projects are being figured which may be closed shortly. Plates are quoted 1.60c, Pittsburgh, to apply for all buyers, preferential or small, on and after Aug. 1.

Cleveland—Miscellaneous orders for plates hold at an excellent level and include material for pressure vessels, brewery tanks, small boilers and similar products requiring steel plates. This makes up largely for abscence of orders for heavier boilers and railroad work. Brewery work, in the experience of some platemakers, has been the saving factor, being sufficient to make up in some degree for lack of other outlets. Commissioning of 40 more freighters of the Pittsburgh Steamship Co. for the lake ore trade will mean additional plates for repairs. Prices are firmly held at 1.60c, Pittsburgh, for third quarter. Preferred customers will be quoted this figure on deliveries after July 31.

Chicago—Plates are moving principally to miscellaneous consumers and tank fabricators. The latter are aided considerably by active demand from breweries. Western oil companies are doing little tank buying, with better demand anticipated when the industrial recovery program has become effective. Plate fabricators meet some difficulty in quoting due to uncertainty regarding future labor and material costs.

Graver Tank & Mfg. Co., East Chicago, Ind., has booked orders recently for tanks of various kinds aggregating 1309 tons.

Boston—Plates are active with buyers seeking material at current prices for early shipment before the 1.70c, Coatesville, Pa., price becomes operative next week. This business has been going at 1.40c to 1.50c, Coatesville. Railroads are taking heavier shipments for repairs. A Worcester, Mass., boiler shop has taken a still contract in Virginia.

New York—A bulge in plate demand is expected with the approach of Aug. 1, when 1.70c, Coatesville, Pa., will be applied generally on tank plates. Floor plates have been advanced as much as $8 per ton in some instances.

Philadelphia—Plate sellers anticipate a growth in specifications as the end of the month approaches and the new price of 1.70c, Coatesville, Pa., will go into effect. Plate operations are at the highest point this year, with one mill now operating at 70 per cent. Two or three other mills are operating above 50 per cent. Railroad tonnage includes 600 tons

placed by the Reading Co. with an eastern mill for repairs to cars of the Jersey Central railroad at the Reading shops. Overlapping of plate, sheet and strip price schedules is eliminated under new classifications new being adopted.

Contracts Placed

6000 tons, 553 beer storage tanks for Schlitz Brewing Co., Milwaukee, to Heil Co., Milwaukee.

1050 tons, mostly medium black, reduced from original inquiry, bureau of supplies and accounts, navy, Central Iron & Steel Co., Harisburg, Pa., and Worth Steel Co., Claymont, Del., awarded bulk of material; Alan Wood Steel Co., Conshohocken, Pa., about 130 tons of floor plates and about 140 tons of medium black; Joseph P. Cattie & Bros., Philadelphia, galvanized plates; bids June 20, schedule 208.

945 tons, tunnel lining and surge tank, New Kanawha Power Co., Gauley Junction, W. Va., to McClintic-Marshall Corp., Bethlehem, Pa.

600 tons, tanks, Blatz Brewing Co., Milwaukee, to Milwaukee Bridge Co., Milwaukee.

600 tons, car repair work for the Jersey Central at the Reading shops, Reading, Pa., to an eastern producer.

460 tons, three additional coal barges, 175 x 26 x 11 feet, for Costanzo Coal Co., to American Bridge Co., Pittsburgh.

193 tons, tanks, as follows: Geyer Bros., Frankenmuth, Mich., brewery, 70 tons; Stearn Roger Mfg. Co., Denver, water tank, 25 tons; International Harvester Co., Chicago, 35 tons; S. C. Johnson Co., Milwaukee, 63 tons, to Graver Tank & Mfg. Co., East Chicago, Ind.

155 tons, spherical holder, Central Hudson Gas & Electric Co., Newburgh, N. Y., to Chicago Bridge & Iron Works, Chicago.

135 tons, 72-inch siphon, Alameda creek, for San Francisco, concrete pipe, steel lined, to unnamed interest.

130 tons, steel stacks for Inland Steel Co., Indiana Harbor, Ind., to Graver Tank & Mfg. Co., East Chicago, Ind.

Unstated tonnage, 75,000 gallon tank on 100-foot tower, Livingston, Tex., to Pittsburgh-Des Moines Steel Co., Pittsburgh.

Contracts Pending

300 to 500 tons, including shapes, steel motorship for Northland Transportation Co., Seattle; Berg Shipbuilding Co., Seattle, low bidder.

Strip

Buying at Slower Rate; Output and Shipments Up

Strip Prices, Page 35

Pittsburgh — Orders for both hot and cold-rolled strip steel in July have been about 20 per cent less than in June but shipments have been far in excess. Some clarification of the hot-rolled strip price is expected to be developed by the end of next week when 1.65c, Pittsburgh, will be applied uniformly. Many buyers entered the market at 1.60c late in June for shipment through July. On all new business, 2.25c, Pittsburgh, is quoted on cold strip.

Cleveland—Demand for steel strip holds well, though at a slower rate than in June. However, mills have sufficient on books to assure heavy rolling for several weeks. Shipments are heavy and delayed somewhat from former schedules. On cold-rolled strip 2.25c, Cleveland, is quoted, with 1.65c, Pittsburgh, on hot-rolled, though some tonnage has been booked at 1.60c, Pittsburgh.

Chicago — Strip shipments are steady and in fairly substantial volume, particularly to the automotive industry. New business is quiet and although prices are steady they have received little test, particularly on cold-rolled strip, which is quoted 2.25c, Pittsburgh-Cleveland. The usual price on hot strip is 1.75c, Chicago.

Boston—Producers of cold-rolled strip bought heavily of hot-rolled before the recent advance and have been taking large shipments. Cold-strip mills hold to the recent active rate. New buying of cold-rolled at 2.45c, Worcester, has been small and the price is generally untested.

New York—Specifications for steel strip are more active than a week ago. Prices are firm at 1.65c, Pittsburgh, for hot-rolled and 2.25c, Pittsburgh, for cold-rolled on shipments to the end of the quarter.

Philadelphia—Strip business is moderately active, with hot-rolled firm at 1.65c, Pittsburgh, or 1.96c, Philadelphia, and cold-rolled at 2.25c, Pittsburgh, or 2.56c, Philadelphia, on shipments up to Sept. 30.

Railroads

Large Coal Car Order Placed; More Rails Are Released

Track Material Prices, Page 35

Award of 325 coal cars by the Youghiogheny Ohio Coal Co., Cleveland, to the Watt Car & Wheel Co., Barnesville, O., is the largest car order in about a year. E. I. DuPont de Nemours & Co. Inc., Wilmington, Del., has placed six 10,000-gallon tank cars with the General American Tank Car Corp., Chicago.

Erie has released the remainder of its rail order. A Pittsburgh rail mill is said to have booked an order for 2500 tons of rails for a carrier in that district. Chicago rail mills have been maintaining a low schedule on small releases and occasional small lot purchases. Indications are for better buying when the government program relating to railroads has been settled. Car repair activity is increasing. Baltimore & Ohio railroad has recalled 500 men to its shops at Glenwood, Pa., Du Bois, Pa., and Keyser, W. Va. Track fastenings orders have been well maintained, at a better rate than for rails. Prices on fastenings are unchanged, but apply only for July buying, for shipment by Aug. 15.

Atlantic Coast Line is inquiring for an exchange of scrap for rails. Florida East Coast has issued an inquiry for 2100 kegs of spikes. Lehigh Valley will repair 860 coal cars and 450 box cars in its own shops. Due to a shortage of cars in good repair one eastern railroad is leasing cars from another at a rental of $1 per day.

Cudahy Packing Co., Chicago, will build 200 refrigerator cars at its plant at Indiana Harbor, Ind., using the steel underframes ordered from the Pullman Car & Mfg. Corp., Chicago, as noted in STEEL, July 17.

Semi-official statements are to the effect that the Canadian government considering further large orders for steel rails to the Dominion Steel & Coal Corp., Montreal, Que., for rolling at its mill at Sydney, N. S. Canadian National and Canadian Pacific are in great need of rails and the government desires to aid industry in the Maritime provinces, both reasons leading to placing such orders for rails. This plant now is rolling on an order for 50,000 tons for the Canadian National.

Car Orders Placed

E. I. du Pont de Nemours & Co. Inc., Wilmington Del. six 10000-gallon tank cars to General American Tank Car Corp., Chicago.

Youghiogheny Ohio Coal Co., Cleveland, 325 coal cars, to Watt Car & Wheel Co., Barnesville, O.

Wire

New Prices Being Held; Users Specify Heavily

Wire Prices, Page 35

Pittsburgh—Buyers continue to specify against contracts placed before the advance in nails to $2.10 per keg, Pittsburgh. However, the latter figure is holding firmly on all new spot business. Plain wire is specified freely at 2.10c, Pittsburgh, with wire rods $35.

Cleveland—Shipments of wire are heavy on specifications booked at the end of second quarter. Prices for third quarter are steady and strong, with expectation of further increase

possible under new code conditions. Manufacturers' wire is quoted at 2.10c, Pittsburgh-Cleveland, wire nails at $2.10 per keg.

Chicago — Wire specifications and shipments are slightly less. Movement of wire products is relatively slower than of manufacturers' wire, activity in which is aided by steady demand from the automotive industry. Producers are accepting business for shipment over the balance of this quarter at $2.15 for carload lots of wire nails and 2.15c for plain wire. Wire mill operations continue heavy, averaging about 60 to 65 per cent.

Boston—Wire mill operations continue high on old specifications. While new buying has declined, demand in some directions, notably manufacturers' wire and specialties, holds well. Mill operations will continue at the present rate for several weeks at least.

Philadelphia—While recent advances on some wire products are being applied on new tonnage, contracts at the old prices will not be shipped completely much before the middle of August. New buying is less active than last month, prior to the advance, but is still moderately good.

Foreign Ores Higher; Eastern Prices Advanced

Iron Ore Prices, Page 36

New York—Prices on foreign ores and fluxes are generally higher, with the latest increase an advance of $2.50 in fluorspar to $20 a gross ton, duty paid, Atlantic ports, 85-5 per cent. This follows an increase a week ago in domestic fluorspar.

Eastern local ores also are higher, with copper free low phosphorus, 58-65 per cent, now nominally 10 to 10.50 cents, delivered eastern Pennsylvania furnaces, and foundry and basic 56-63 per cent, 8 to 9 cents.

Foreign manganiferous ore, 45-55 per cent iron, 6-10 per cent manganese, is up a half a cent to 8.50c, per unit, alongside docks, Atlantic ports. Swedish low phosphorus is likewise up a half a cent to 8.50c. Swedish basic, 65 per cent, is 8.00c, compared with 7.50c to 8.00c. Russian basic or foundry, 65 per cent, is being offered at 8.00c. North African low phosphorus and Spanish and North African basic, are unchanged at 7.00c.

Caucasian manganese, 52 to 55 per cent, is being offered at 20.00c, c.i.f. Atlantic ports; South African, 52 per cent, also at 20.00c, with 49 to 51 per cent nominally 18.00c to 19.00c; and 44 to 47 per cent, 17.00c to 18.00c. Brazilian, 46 to 48 per cent, is 17.00c to 18.00c.

PROGRESS? YES!

When we told you why Mansfield Electrical Sheets are INHERENTLY GOOD, and they are, we did not mean that we feel satisfied with them. When they are perfect, we won't need to do much but rest, but now we are hustling constantly to make PROGRESS.

PROGRESS means to us doing a better job, giving you better sheets, better looking and better behaving, so that your job may be easier and that your motors and transformers may be better.

"Satisfaction is the worst enemy of progress and is one of the world's worst diseases."

C. F. Kettering

MANSFIELD ELECTRICAL SHEETS

EMPIRE STEEL CORPORATION

Mansfield, Ohio

Sales Offices:

New York, Dayton, Cleveland, Indianapolis, Chicago, Detroit, St. Louis, San Francisco

Structural Shapes

Market Slow, Although Awards Gain—Inquiries Are Light—Few Shops Covered Far Ahead—Elimination of Pencoyd Basing Point to Boost Price in East

STRUCTURAL SHAPE PRICES, PAGE 35

Pittsburgh — Inquiry supported largely by private work has been continuing light and the absence of the federal building program is keenly felt. Blaw-Knox Co., Blawnox, Pa., has been named low bidder on transmission lines from Boulder dam, Nev., to Los Angeles. The work involves a large amount of structural steel, contract valued at around $3,000,000. Island Creek Coal Co., Huntington, W. Va., which received bids recently for the construction of a 240-foot steel dock, has canceled all bids on account of high prices. A public hearing at Forest county court house, Pennsylvania, July 28, will be held to consider building of a 3-span 220-foot bridge across the Allegheny river in Tionesta township. W. N. Kratzer Co., Pittsburgh, is low on 91 sill plates made of structural steel for use in lock No. 9, Ohio river. Washington and Greene counties, Pennsylvania, have applied for federal permission to build a bridge across Ten Mile creek between East Bethlehem township, Washington county and Jefferson township, Greene county. The base price on plain material is still quoted 1.60c, Pittsburgh, and by Aug. 1, it is expected preferential buyers will be placed upon this basis.

Cleveland—Inquiry of structural shapes is light though considerable work is in prospect, some being delayed for financing. Bids will be opened July 27 on 250 tons of shapes and 150 tons of armor plate for the garbage incinerator for Cleveland. The armor plate is for lining certain trenches, for resistance to chemical action.

Chicago—Bids close July 31 on a bridge at Morris, Ill., requiring 1300 tons, in addition to one at Justice Park, Ill., taking 1500 tons, on which old bids were rejected. Additional inquiries for postoffices are appearing, practically all of which are for small projects. City of Chicago is taking bids on a steel scow, 100 x 30 feet, involving 150 tons. Inquiries generally show little improvement in number or in tonnage, while awards recently have been for only small lots.

Boston—Structural steel demand is light, but there are indications of an improvement in the late summer and early fall with the development of public work. Meanwhile, New England fabricators have not covered far in advance as plain material becomes firm to all buyers at 1.70c, eastern mill, next month. Most shops buy as they receive fabricating contracts.

New York—Demand for structural steel is sluggish. With plain material at 1.70c, eastern mill, to all buyers after July, some shops have covered moderately. Until the federal government program gets under way, the present lull is expected to continue.

Philadelphia—Elimination of the Pencoyd, Pa., basing point under the steel code will bring the cost of shapes to consumers here up 6.60 cents per 100 pounds in the matter of freight rate. In addition, the basing price will be advanced approximately $2 a ton, effective Aug. 1, to 1.70c. This is expected to stimulate specifications somewhat over the remainder of this month. Included in the few outstanding structural tonnages are 700 tons for two buildings for the D. G. Yuengling & Son brewery, Pottsville, Pa., and 150 tons for work at Freeport Mills, Pa.

Contracts Placed

700 tons, building, Manhattan Refrigerating Co., New York, to Harris Structural Steel Co., New York, through Walter Kidde Constructors Inc., New York.

690 tons, Berkeley dormitory, Yale university, New Haven, Conn., to Lehigh Structural Steel Co., Allentown, Pa.; Marc Eidlitz & Son Inc., New York, general contractors.

615 tons, mill building, Tubize Chattilon Corp., Rome, Ga., to Virginia Bridge & Iron Co., Roanoke, Va.

580 tons, Fon du Lac avenue viaduct, Milwaukee, to Wisconsin Bridge Co., Milwaukee.

550 tons, bridge, Woodward county, Oklahoma, to Pittsburgh-Des Moines Steel Co., Des Moines, Iowa; Leo Sanders, Oklahoma City, Okla., general contractor.

435 tons, state building, Wassaic, N. Y.; awarded through Wark Co., Philadelphia, to unnamed fabricator.

320 tons, garage, West Twenty-third street, New York, to Lieder Structural Steel Co., New York; Lehigh Structural Steel Co., Allentown, Pa., to fabricate the material.

320 tons, office and stores building, Cortland-Dey streets, New York, to Ingalls Iron Works Co., Birmingham, Ala.

310 tons, trash racks, Boulder dam, Nevada, to Pacific Car & Foundry Co., Seattle.

282 tons, boilerhouse, veteran's hospital, Marion, Ind., to Duffin Iron Co., Chicago; E. J. Young Co., Chicago, general contractor.

275 tons, grain elevator and marine tower, Chicago, for Santa Fe railroad, to Gage Structural Steel Co., Chicago.

270 tons, two mill buildings, Pittsburgh Plate Glass Co., Clarksburg, Pa., to Pittsburgh Bridge & Iron Co., Pittsburgh.

264 tons, state highway bridges, Chickasaw and Lee counties, Mississippi, to McClintic-Marshall Corp., Bethlehem, Pa.; Pigford Bros., Meridian, Miss., general contractors.

250 tons, planetarium, Griffith Park, Los Angeles, to Pacific Iron & Steel Co., Los Angeles.

231 tons, repairs and alterations to Louisiana street bridge, Buffalo, to Lackawanna Steel Construction Corp., Buffalo.

219 tons, aerial tramway Pennsylvania Dixie Cement Corp. Nazareth, Pa., to Lehigh Structural Steel Co., Allentown, Pa.

200 tons, plant, George A. Hormel Co., Austin, Minn., to Crown Iron Works Co., Minneapolis.

200 tons, Century Brewing Co. plant, Seattle, to Isaacson Iron Works, Seattle.

200 tons, state highway bridge, Brunswick, Md., to American Bridge Co., Pittsburgh.

190 tons, viaduct repairs, Naples, Calif., Southern Pacific Co., to McClintic-Marshall Corp., Bethlehem, Pa.

170 tons, shapes and plates, Panama, to United States Steel Products Co., New York, and Central Iron & Steel Co., Harrisburg, Pa.; bids July 10.

150 tons, trash racks, bureau of reclamation, Minnequa, Colo., to Midwest Steel & Iron Works, Denver.

131 tons, Three Falls City building, Louisville, Ky., to Jones & Laughlin Steel Corp., Pittsburgh.

Shape Awards Compared

	Tons
Week ended July 22	**7,552**
Week ended July 15	**5,706**
Week ended July 8	**25,406**
This week in 1932	**5,373**
Weekly average, 1932	**14,285**
Weekly average, 1933	**14,717**
Weekly average, June	**12,878**
Total to date, 1932	**459,903**
Total to date, 1933	**441,534**

Contracts Pending

13,000 tons, Portchester-Pelham viaduct, New York; Westchester County Park commission considering going ahead with plans with federal financial assistance.

2000 tons, police headquarters, Buffalo, N. Y.; John W. Cowper Co., Buffalo, low.

1300 tons, bridge, Morris, Ill.; bids July 31.

700 tons, bridge for Delaware, Lacka-

wanna & Western railroad, Cheektowaga, N. Y.; American Bridge Co., Pittsburgh, low.
600 tons, New York tubercular state building, Mount Morris, N. Y.
575 tons, state highway bridges, Mississippi; bids in July 21.
500 tons, addition, postoffice, Des Moines, Iowa; bids Aug. 16.
445 tons, angles and shapes, bureau of supplies and accounts, navy, Pacific Coast Steel Corp., Bethlehem Steel Co. and Jones & Laughlin Steel Corp. low on classes requiring larger tonnages; Bids July 5, schedule 268.
400 tons, including 150 tons of armor plate for lining trenches, for garbage incinerator, Cleveland; bids July 27.
325 tons, postoffice, Cambridge, Mass.; Landis & Young, Monroe, La., low one alternate, $331,000; H. T. Smith Construction Co., New York, low on second alternate, $289,500; bids July 18.
250 tons, building and rectory, St. Andrews Roman Catholic church, New York.
200 tons, ship for Northland Transportation Co., Seattle; Berg Shipbuilding Co., Seattle, low.
200 tons, warehouse, D. G. Yuengling & Son, Pottsville, Pa.; bids asked.
165 tons, state highway bridge, Flint, Mich.
150 tons, 25 towers and extensions, department of commerce, Washington; Missouri Rolling Mill Co., St. Louis, low; bids July 13.
150 tons, bridge work, Freeport Mills, Pa.; bids asked.
150 tons, scow, Chicago; bids July 21.
140 tons, bridge, Pennsylvania railroad, Springbrook, N. Y.; Lackawanna Steel Construction Co., Buffalo, low.
132 tons, Producers Milk Co., Cleveland; bids on general contract July 21.
107 tons, Harvey Canal bridge, Jefferson Parish, La.; W. Horace Williams Co. Inc., New Orleans, general contractor. Steel to be bought later.
100 tons, postoffice, Marshfield, Oreg.; bids opened.
100 tons, addition, postoffice, Wilmington, N. C.; Algernon Blair, Montgomery, Ala., low.
100 tons, addition, postoffice, Asbury Park, N. J., Aronson & Gluck Inc., New York, low.
Unstated tonnage, postoffice, Grand Rapids, Mich.

Concrete Bars

Activity Improved with Awards Rising — Largest Takes 2200 Tons—Prices Hold Steady—Private Construction Slow Coming Out —Await Federal Building

REINFORCING BAR PRICES, PAGE 35

Pittsburgh—Shipments of new billet steel reinforcing bars are in excess of incoming specifications which still are feeling the effects of the awaited federal building programs. These programs have in turn tied up highway building plans in numerous states though it is forecast that upon release vast tonnages of bars will be required. Rail steel bars for four buildings for the Marine hospital, Pittsburgh, have not yet been bought although Davis-Smith Co. Inc., Pittsburgh is low bidder on the general contract. Present price of new billet steel bars is 1.75c, Pittsburgh, in cut lengths, with rail steel bars quoted 1.50c, Pittsburgh.

Cleveland—Except for about 250 tons of reinforcing bars for the garbage incinerator at Cleveland, for which bids will be opened July 27, there is little business in prospect for dealers here. A fair volume of small lots has been moving and the aggregate of these is fairly large. Prices are holding and an advance is expected within a short time.

Chicago—Reinforcing bar awards still involve only small lots and with a few exceptions inquiries are of similar size and unimproved in number. Indiana road work will take 1000 tons, while Michigan highway bridges require 400 tons. Closing on 3000 tons for Milwaukee sewer work is expected to be deferred several weeks. Private construction is slow to increase. Shipments against old orders are fairly active, with prices on spot business steady at 1.75c for billet bars, and 1.50c for rail steel. Quotations on future business have yet to be established.

Boston—Concrete reinforcing bars are slightly more active with additional work pending, although such tonnage is not large. A sewer project in the Dorchester district, Boston, has been let. On small lots, making up the bulk of current business, 1.75c, cut length, Buffalo, is fairly firm with indications of this price becoming general on all business next month.

New York—Concrete reinforcing steel bars are steadier, shading being less frequent on ordinary tonnages. Bulk of the larger contracts which brought out recent weakness have been placed. For a brewery building at Brooklyn close to 1000 tons leads awards. Panama is taking bids on 230 tons, mostly squares, while New York state highway and bridge work is being figured to come out shortly.

Philadelphia—Approximately 2200 tons of reinforcing bars have been placed for piers of the Pennsylvania railroad at Baltimore with the Concrete Steel Co. Little else is outstanding, with the price situation still mixed.

Concrete Awards Compared

	Tons
Week ended July 22	3,724
Week ended July 15	740
Week ended July 8	5,832
This week, 1932	5,989
Weekly average, 1932	3,920
Weekly average, 1933	3,121
Weekly average, June	2,406
Total to date, 1932	127,428
Total to date, 1933	93,646

Contracts Placed

2200 tons, Pennsylvania railroad piers, Baltimore, to Concrete Steel Co., Philadelphia.
1000 tons, building, F. & M. Schaefer Brewing Co., Brooklyn, N. Y., to Jones & Laughlin Steel Corp., Pittsburgh; Turner-Rostock Corp., New York, general contractor.
150 tons, two state bridges, Valley county, Idaho, to unnamed interests.
131 tons, school, Fairbanks, Alaska, to Soule Steel Co., Portland, Oreg.; McDonald Building Co., St. Louis, general contractor.
125 tons, sewer, Crescent Avenue Brook outlet, Dorchester district, Boston to Kalman Steel Corp., Bethlehem, Pa.; J. J. Coughlan & Son Inc., Boston, general contractor.
118 tons, state highway bridges, Chickasaw and Lee counties, Mississippi, to Laclede Steel Co., St. Louis; Pigford Bros., Meridian, Miss., general contractors.

Contracts Pending

3200 tons, sewage disposal plant extension, Milwaukee; G. R. Fehr Inc., Milwaukee, low bidder on general contract at $693,041.
2200 tons rail steel bars storm drain sewer, Buffalo; bids in.
1810 tons, outfall sewer section CL, Louisville, Ky.; bids Aug. 22.
1000 tons, Indiana road work.
625 tons, placing, Eaton Wash dam, Los Angeles; Mittry Bros. Construction Co., Los Angeles, low on general contract.
400 tons, highway bridges, Michigan.
275 tons, state highways and bridges, Mississippi; bids in July 21.
250 tons, garbage incinerator, Cleveland; bids July 27.
230 tons, mostly squares 1¼-inch, Panama; bids July 27; schedule 2886.

Must Mark Reinforcing

Effective Aug. 25, the name of the country of origin must be placed upon iron and steel materials for reinforcing concrete imported into the United Kingdom, according to the American commercial attache at London.

Pipe

Cast Pipe Placed for West Coast Projects — Await Needs for Federal Building Work

PIPE PRICES, PAGE 35

Pittsburgh—Revised discounts on standard commercial seamless boiler tubes, both cold drawn and hot rolled, are now quoted as in the table on page 36 of this week's issue of STEEL. These changes are coincident with revised discounts on lap-weld steel boiler tubes in carloads. Demand for tubular goods is a little quieter than a month ago with the keenest restriction being felt in oil country goods. Standard pipe appears headed for slightly better demand when a federal building program is released soon, but jobbers are in most instances fairly well stocked following a rush to cover before the recent price advance. No line pipe projects of any consequence are considered ready for closing.

Cleveland—Pipe is moving to jobbers at an increased rate and some business in steel pipe has been closed. McClintic-Marshall Corp., Bethlehem, Pa., has taken 110 tons of welded steel pipe for the Corpus Christi, Tex., plant of Southern Alkali Corp., Barberton, O. About two miles of steel pipe will be required for the Palmer reservoir at Cleveland, for which plans are about completed.

Chicago—Cast pipe orders are slow to appear, while the volume of prospective work is increasing steadily. Sellers anticipate the release of considerable of this business by early fall. Some delay is occurring in the obtaining of federal loans for proposed projects, except in the case of those on which preliminary plans were completed sometime ago, but on which inquiries were not issued. Chicago has placed 875 tons of 8-inch pipe while most of the other large cities in this district are doing little buying.

New York — Eastern cast pipe foundries have stepped up operations slightly. Prices are unchanged, with some shading on larger inquiries. Pelham, N. Y., closes this week on close to 1000 tons. White Plains, N. Y., is expected out later for several hundred tons. Requirements for a New Jersey utility, bids last week, went to the Florence, N. J., seller.

Boston—Approximately 2000 tons of cast pipe has been bought by two Connecticut municipalities, both contracts going to outside eastern foundries. Providence, R. I., is opening bids next week on about 500 tons. Small-lot buying is fair. Several substantial New England water line projects awaiting financing may go ahead shortly.

Birmingham, Ala.—Several lettings were received during the past week or two, adding to business on books. Production is improved. The pipe industry is following the general procedure of the industrial recovery act, with limitations of hours of work and advances in wages.

Cast Pipe Placed

1595 tons, 6 and 8-inch, class 150, San Francisco, to Central Foundry Co., Birmingham, Ala.

1000 tons, 4 to 12-inch, class 150, Riverside, Calif., to United States Pipe & Foundry Co., Birmingham, Ala.

1000 tons, 4 to 16-inch, Washington, to United States Pipe & Foundry Co., Burlington, N. J.

875 tons, 8-inch, Chicago, to Lynchburg Foundry Co., Lynchburg, Va.

300 tons, 8 and 10-inch, Ridgefield, Conn., to Donaldson Iron Works, Emaus, Pa.

250 tons, hospital project, Oneonta, N. Y., to Donaldson Iron Works, Emaus, Pa.

240 tons, 8-inch, Public Service Corp. of New Jersey for installation at Harrison, N. J., to R. D. Wood & Co., Florence, N. J.

Steel Pipe Placed

513 tons, viaduct railing for New York Central railroad, New York, to Sexauer & Lemke Inc., Long Island City, N. Y., through James Stewart & Co. Inc., New York.

110 tons, welded steel pipe for Southern Alkali Corp., Barberton, O., for works at Corpus Christi, Tex., to McClintic-Marshall Corp., Bethlehem, Pa.

Unstated tonnage, 10,000 feet, small sizes, iron or steel pipe for Panama, to Jones & Laughlin Steel Corp., Pittsburgh.

Cast Pipe Pending

3700 tons, 4 to 18-inch, class 150, Alderwood Manor, Wash.; bids opened.

1112 tons, 24 and 30-inch, class B and C, Denny Way pipeline, Seattle; bids in.

950 tons, 6 to 12-inch, Pelham, N. Y.; bids July 29.

500 tons, 12-inch, Providence, R. I.; bids July 31.

450 tons, 18 and 20-inch sewer pipe, for Westchester county, New York; bids Aug. 11.

400 tons, McNeil Island, Wash., penitentiary; bids in.

172 tons, 18-inch, class 150, Alhambra, Calif.; bids in.

135 tons, 10-inch, Snohomish, Wash.; date for bids not set.

Steel Pipe Pending

Unstated tonnage, about 2 miles, steel pipe for Palmer reservoir, Cleveland; plans being drawn; bids in August.

Unstated tonnage, 4750 steel boiler tubes, bureau of supplies and accounts, navy department, Puget Sound, Wash.; bids in. Globe Steel Tubes Co., Milwaukee, low f.o.b. works; Michigan Seamless Tube Co., South Lyon, Mich., low delivered.

Mirrors of Motordom

(*Concluded from Page* 17)

manufacturers now have is being diverted to these obligations.

YOUNGSTOWN Sheet & Tube Co. is expected to be competitor in the alloy steel market by fall, it being reported that its Brier Hill works at Youngstown will be revamped for alloys . . . . General Motors Products of Canada has again expanded its schedule, the gain since May 5 being 5436 units or 30 per cent . . . . Rotary Electric Steel Co., new maker of cold-finished bars by the rotary process, will soon be in the market, John S. Andrews, formerly of Republic, heading up its sales department. . . . A. O. Smith Corp., Milwaukee, has increased its daily production of steel beer barrels to 6000 units, making this department a serious competitor of its frame business . . . . Murray has received an order for 10,000 steel beer barrels from the Prima Co. brewery at Chicago.

Windows of Washington

(*Concluded from Page* 15)

covery administration. Their salaries average about $2600 annually.

One notable exception was the stipend for Donald Richberg, general counsel of the administration. A recent meeting of the special industrial recovery board approved a salary of $12,000 a year for Mr. Richberg, who it will be remembered, aroused a storm of protest by stating at a luncheon in New York that if industrial codes were not submitted more promptly the government would be justified in putting American industry in a political strait-jacket.

The general scale of salaries already approved by the board calls for a maximum of $6000, with a permissible maximum of $8500 in exceptional cases.

MACHINERY and equipment manufacturers have quite a job cut out for them in selling Washington an accurate idea of the importance of the capital goods industries.

If you will talk with ten deputy administrators in N. I. R. A. and P. W. A., six or seven of the ten will

tell you that plant expansion, introduction of labor saving equipment and modernization should not be emphasized at this time. It is pretty hard to get a clear-cut statement from any one in authority.

General Johnson is an exception. His mind seems to be pretty clear on this subject. He says:

"I think that the necessary installation of new equipment should go forward. If you stopped inventiveness and progress that would be very stupid. I do think that for a short period it would be wise to not emphasize the installation of machinery that tends to further reduce the field of employment. It is not our purpose here to stop economic progress."

Bolt, Nut Buying Shows Some Gain Following Lull

Bolt, Nut, Rivet Prices, Page 35

Bolt, nut and rivet orders have been undergoing a slight decline at Pittsburgh, owing to heavy specifications placed before the advance to the present quoted 73 off list on bolts and nuts. The same is true in the rivet market which is now quoted at 2.50c, Pittsburgh, an advance of $5 a ton over a month ago. Orders, however, display a strong undertone and many buyers are being heard from.

At Chicago, sales and specifications show some improvement after the lull, agricultural implement makers increasing their requirements, though still light. Railroad buying has made a small gain. Nuts and bolts are 73 off and large rivets 2.60c, Chicago.

Ferroalloy Prices Firm; Most Users Well Covered

Ferroalloy Prices, Page 36

New York—Ferromanganese continues to hold at $82, eastern seaboard, for spot and contract material in car lots for delivery this quarter. Shipments are being well sustained. Spot domestic spiegeleisen, 19 to 21 per cent, is unchanged at the new price of $27, furnace, an increase of $3 over the ruling price in the first half on spot tonnage. All contract customers appear covered for the remainder of the year at prices prevailing for first half.

Capitol Steel & Iron Co., Oklahoma City, Okla., has established a branch fabricating plant at 203 South Lansing street, Tulsa, Okla., containing 14,000 square feet. S. S. Forsythe is manager of the new branch.

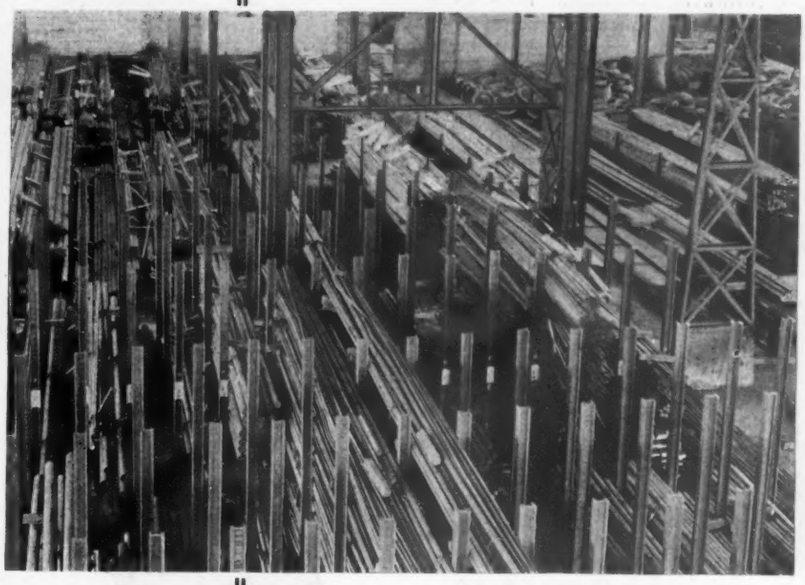
Much Fluorspar Moving

Fluorspar Prices, Page 36

Gravel fluorspar shipments are heavy, with some producers booked to capacity through September. Prices recently were advanced to $14 a net ton in carloads, Kentucky and Illinois mines, for 85-5 per cent material, with No. 2 lump fluorspar $16, increases of $1 a ton. Opening of the new Illinois waterway has permitted the first barge shipment of fluorspar to a Chicago district steel plant. Considerable spar moves annually via the Ohio river to eastern consumers.

BL

COLD DRAWN STEELS



SQUARES
ROUNDS
HEXAGONS
FLATS
EXTRA WIDE FLATS
SPECIAL SHAPES

For the past three years our Field Representatives have been preparing for today. A time when the wheels of industry start turning and economy of operations determines profit or loss. This National source of cold finished bars is in a position today to help you with your bar steel problems. We would welcome the opportunity to work with you and to serve you. To give you the benefit of our studies as well as to reveal the savings that cold finished bars hold for you.

Bliss & Laughlin, Inc.

Harvey, Ill. Buffalo, N. Y.

Sales Offices in all principal cities

Pig Iron

Buying Under New Price Falls Off Slightly — Shipments Are Unabated — Light More Stacks

PIG IRON PRICES, PAGE 36

Pittsburgh—Several carload sales, and a few larger, have been closed at the new price of $17, Neville island, for foundry, malleable and gray forge grades. Basic is quoted $16.50, Pittsburgh, with bessemer $17.50. The unexpected advance of $1 a ton ten days ago did not afford buyers the opportunity of covering before the advance.

Chicago—Shipments still are increasing and the movement this month is expected to show a gain of 20 to 25 per cent over the June total. New business has been less active following the recent price advance of $1 a ton, although some sellers who previously had been taking orders only for early shipment are booking additional lots for future delivery. A number of consumers who previously had underestimated their requirements are re-entering the market and since speculative buying several months ago was offset by rapid gains in consumption, sellers regard the outlook for coming months as favorable. Automotive requirements continue active and have yet to show the anticipated seasonal decline. Prices are steady at $17, furnace, for No. 2 foundry and malleable.

Cleveland—Inquiry is currently quiet but some small tonnage is being sold at the new prices. Melters are putting iron into production and shipments are being made at a rate much above those of June. One important producer in this district finds shipments thus far in July 40 per cent above those of the corresponding period in June. This is a reversal of the usual trend, as July normally marks the low spot of the year. National Tube Co., Lorain, O., has blown in another furnace, making four out of five stacks active there.

Boston—Importers of iron have followed the recent $1 advance in domestic prices, both Dutch and India, additional tonnage of the former having arrived at Providence. Minimum by the New England producer is $17, furnace. New differentials on silicon content represent a stronger price structure than the general $1 advance would indicate. Higher silicon grades at some furnaces are in short supply. Sales have gained in the last 10 days.

New York—Buying is light but some business has been booked at the new range of prices for delivery over the remainder of the third quarter. A 50-cent differential on shipments into Connecticut has been eliminated.

Philadelphia—Base prices on iron continue unchanged. With Sparrows Point listed as the basing point under the steel code, shipments of eastern Pennsylvania iron into Baltimore will take the 90-cent freight rate from Sparrows Point to Baltimore, plus surcharge, instead of the existing rate of $2.02, plus surcharge, from Swedeland, Pa., to Baltimore. The Brooke furnace, at Birdsboro, Pa., is expected to blow in Sept. 1.

Buffalo—Weakness in other commodities which developed at midweek abruptly checked sales of pig iron after some fair tonnage had been lined up at new prices. Shipments continue stronger and melt is believed to be rising steadily. The Hanna Furnace Corp. stack here probably will start making iron this week, increasing to six the number of producing units in this district. Another addition to the active battery is scheduled tentatively for August.

Cincinnati—A lull in buying has followed a rush to cover before the recent price increase. Only spot buying in small lots, either of northern or southern iron, was reported during the past week. Shipments are well maintained, with the tonnage this month, by present indications, heavier than in June.

St. Louis—Sellers are concerned mainly with deliveries on prior contracts, new purchasing having subsided noticeably the past week. Shipments continue heavy, with the leading local producer reporting forwardings the largest for any month this year. Prices hold steady at the recently advanced figure.

Birmingham, Ala. — Shipments continue active, though sales are somewhat slower. Nine blast fur-

One of 30,000 STAMPINGS

Produced by

CROSBY Stamping Engineers

Since 1896 the Crosby plant has been devoted, exclusively, to designing and producing Sheet Metal Stampings. Avail yourself of this experience. Send us your next stamping problem and watch results.

THE CROSBY COMPANY

BUFFALO, N. Y.

Branch Offices:

New York, Cleveland, Philadelphia, Detroit, Pittsburgh, Chicago.

naces still are producing, with two others being made ready for action early next month. New base price, $13 f.o.b. furnaces, No. 2 foundry, has not slowed up demand.

Coke

Shipments at High Rate; Forward Prices Uncertain

Coke Prices, Page 36

Furnace coke producers are unwilling to accept tonnages for much less than $3.50, or in occasional instances $3.25 per ton, Connellsville oven basis. Several inquiries in the market at present are being quoted at these prices. Producers are hesitant to quote even at these advanced levels and are at the most extending protections for only a month. On smaller sales furnace coke is quoted at $3 to $3.25, with foundry grades at $3 to $3.50 and premium foundry at $4 to $4.50, all Connellsville ovens.

Foundry coke shipments at Chicago so far in July are 10 to 15 per cent heavier than a month ago. August prices have yet to be announced, the market for July shipment being $7.50, ovens, for outside delivery and $8.25, delivered Chicago.

For August and September delivery producers at St. Louis have announced $8.25 per ton for foundry coke, an advance of 50 cents over the July price. Protection on furnace coke in that area is limited to Sept. 30.

Iron Ore Stocks Reduced

Stocks of iron ore at lower lake ports and furnaces July 1 amounted to 27,479,090 tons, according to the Lake Superior Iron Ore association, Cleveland. This was 4,679,582 tons less than on the same date last year. Further comparisons follows:

	Tons
Consumed in May	1,265,623
Consumed in June	1,894,004
Increase in June	628,381
Consumed in June, 1932	731,108
Ore at furnaces July 1, 1933	22,690,342
On Lake Erie docks July 1, 1933,	4,788,748
Total at furnaces and Lake Erie docks July 1, 1933	27,479,090
Total July 1, 1932	32,158,672

Sheet Bars Show Strength

Semifinished Prices, Page 36

Pittsburgh—Tin plate producers are still the heaviest takers of semi-finished steel output in the Pittsburgh district, although bar mills have been taking considerable amounts and one 18-inch mill in particular here is booked up solid for the next three to four weeks. The price of $26, Pittsburgh, on sheet bars, billets and slabs may develop greater strength as preferred buyers are expected to unify under a single price basis by Aug. 1. At that time, it is expected strength will be especially noted in sheet bars. As in the past, there have been more concessions granted in sheet bars than in billets. Wire rods are holding $35 but wholly dependent upon any change in billets.

Elliott & Stephens Machinery Co., St. Louis, is now representing the Heald Machine Co., Worcester, Mass., manufacturer of grinding equipment, in Missouri, Oklahoma, Kansas and southern Illinois.

SIXTY BILLION SCUFFLING FEET GRIND AWAY FOR EIGHTEEN YEARS

on "AW" Rolled Steel Floor Plate

Muddy boots and Paris pumps, high heels and hobnails—a ceaseless parade pounds and shuffles and scuffs along for eighteen years before the Rolled Steel floors in the vestibules of New York City's subway cars give up the battle and are ready for replacement.

In all the world there is no other service so severe—no other floor material which could meet that drastic test.

Alan Wood rolls floor plate in the safe and scientific **Diamond** and **Diamondette** patterns for service of any kind and in any ferrous or non-ferrous metal. Use it and you will enjoy long life and sure protection for your shop floors, trench covers, runways, platforms, balconies and the like.

Slip-proof
Oil-proof
Heat-proof
Crack-proof

We gladly work on difficult problems.

Safe
Sightly
Self-draining
Splinterless

ALAN WOOD STEEL CO.

CONSHOHOCKEN, PA.

107 Years Iron and Steel Making Experience

Branch Offices:

Philadelphia · **New York** · **Los Angeles**
Seattle · **San Francisco** · **Houston**

Scrap

Sharp Increase in Prices Is General—Scarcity Revealed As Demand Grows Stronger

Pittsburgh—In one of the most spectacular weeks on record, No. 1 heavy melting steel in the Pittsburgh district advanced from $12.50 to over $13.50. Even at $13.50, brokers are unwilling to sell and believe that $14 will govern the next sale. During the past week, one mill here which had delayed buying for some time purchased at $13.50 and established the market at $1 a ton above the previous sale made two weeks ago. Low phos. billet, bloom and slab crops all are higher, as are specialties. Hydraulic compressed sheets are as high as heavy melting steel. Other grades are higher, with advances of 50 cents to $1 frequent.

Cleveland—Advances of 50 cents to $1.50 per ton have been made on various grades of steel and iron

IRON AND STEEL SCRAP PRICES

Corrected to Friday night. Gross tons delivered to consumers, except where otherwise stated

HEAVY MELTING STEEL
Birmingham	9.00 to 10.00
Boston, dealers	6.00 to 6.50
Buffalo, No. 1	11.00 to 11.50
Buffalo, No. 2	10.00 to 10.50
Chicago	10.50 to 10.75
Cleve., No. 1	10.50 to 11.00
Cleve., No. 2	10.00 to 10.50
Det., No. 1	9.50 to 10.00
Det., No. 2	8.50 to 9.00
E. Pa., del. mill	10.50 to 11.00
E. Pa., No. 2 del.	9.50 to 10.00
Federal, Ill.	8.75 to 9.25
Granite City, Ill.	8.00 to 8.50
N. Y., deal. R. R.	8.00
N. Y., deal. No. 2	6.50 to 7.00
N. Y. deal. yd.	2.50 to 3.00
Pitts., No. 1	13.50 to 14.00
St. L. No. 1 del.	9.00 to 9.50
Valleys, No. 1	13.00

COMPRESSED SHEETS
Buffalo, dealers	9.50 to 10.50
Chi. (Factory)	8.50 to 9.00
Cleveland	10.00 to 10.50
Detroit	9.25 to 9.75
E. Pa. new mat.	9.50 to 10.00
Pittsburgh	13.50 to 14.00
Valleys	12.50

BUNDLED SHEETS
Buffalo	5.50 to 6.00
Cincinnati, del.	6.00 to 6.50
Cleveland	8.00 to 8.50
Eastern Pa.	8.50 to 9.00
Pittsburgh	12.50 to 13.00
St. Louis	5.50 to 6.00

SHEET CLIPPINGS LOOSE
Chicago	4.50 to 5.00
Cincinnati	5.00 to 5.50
Detroit	6.00 to 6.50
St. Louis	5.00 to 5.50

STEEL RAILS SHORT
Birmingham	11.50 to 12.00
Boston, dealers	5.50 to 6.00
Buffalo	12.00 to 12.50
Chicago (3 ft.)	11.50 to 12.00
Chicago (2 ft.)	12.00 to 12.50
Cincinnati, del.	11.50 to 12.00
Detroit	11.00 to 11.50
Pitts. (open-hearth, 3 ft. and less)	14.50 to 15.00
St. Louis	10.50 to 11.00

STOVE PLATE
Birmingham	7.00 to 7.50
Boston, dealers	4.00 to 4.25
Buffalo	9.00 to 9.50
Chicago, net	8.00 to 8.50
Cinci., deal. net	6.00 to 6.50
Detroit, net	4.00 to 4.50
Eastern Pa.	8.50 to 9.00
N. Y. deal. Fdry.	5.50
St. Louis	7.00 to 7.50

COUPLERS, SPRINGS
Buffalo	11.50 to 12.00
Chicago	11.00 to 11.50
Eastern Pa.	11.00 to 12.00
Pittsburgh	14.50 to 15.00
St. Louis	10.00 to 10.50

ANGLE BARS—STEEL
Chicago	11.00 to 11.50
St. Louis	9.50 to 10.00

LOW PHOSPHORUS
Buffalo, billets and bloom crops	11.50 to 12.50
Cleveland bil. and bloom crops	12.50 to 13.50
Eastern Pa.	12.00 to 13.00
Pittsburgh billet bloom crops	16.00 to 16.50
Pitts., sheet bar crops	16.00 to 16.50

FROGS, SWITCHES
Chicago	10.50 to 11.00
St. Louis	10.00 to 10.50

SHOVELING STEEL
Chicago	10.50 to 10.75
Cleveland	6.75 to 7.00
St. Louis	9.00 to 9.50

RAILROAD WROUGHT
Birmingham	7.00 to 7.50
Boston, dealers	2.00 to 2.50
Buffalo, No. 1	7.00 to 8.00
Buffalo, No. 2	11.00 to 11.50
Chi., No. 1, net	9.00 to 9.50
Chi., No. 2	10.50 to 10.75
Cinci., No. 2	9.00 to 9.50
Eastern Pa.	12.00 to 12.50
N. Y., No. 1 deal.	5.50 to 6.00
Pitts., No. 1	13.50 to 14.00
St. Louis, No. 1	7.00 to 7.50
St. Louis, No. 2	8.75 to 9.25

SPECIFICATION PIPE
Boston	3.50 to 4.00
Eastern Pa.	9.00
N. Y., deal.	5.50 to 6.00

BUSHELING
Buffalo, No. 1	9.50 to 10.50
Chicago, No. 1	8.50 to 9.00
Cinci., No. 1 deal.	6.50 to 7.00
Cinci., No. 2	3.00 to 3.50
Cleve., No. 2	7.50 to 8.00
Det., No. 1 new	7.75 to 8.25
St. Louis, No. 1	6.00 to 6.50
Val. new No. 1	12.00 to 12.50

MACHINE TURNINGS
Birmingham	3.00 to 3.25
Boston, dealers	3.75 to 4.00
Buffalo	6.25 to 6.75
Chicago	6.00 to 6.50
Cinci., deal.	5.50 to 6.00
Cleveland	7.25 to 7.50
Detroit	6.25 to 6.75
Eastern Pa.	7.50
N. Y., deal.	4.00 to 4.50
Pittsburgh	10.00 to 10.50
St. Louis	3.00 to 3.50
Valleys	10.75 to 11.00

BORINGS AND TURNINGS
For Blast Furnace Use
Boston, dealers	3.50 to 3.75
Buffalo	6.50 to 7.00
Cinci., deal.	5.50 to 6.00
Cleveland	7.75 to 8.00
Detroit	6.50 to 7.00
Eastern Pa.	7.00
N. Y., deal.	4.00 to 4.50
Pittsburgh	9.00 to 9.50

CAST IRON BORINGS
Birming., chem.	8.50 to 9.50
Birming., plain	3.00 to 3.25
Boston, chem.	5.50 to 6.00
Boston, dealers	3.25 to 3.50
Buffalo	6.25 to 6.75
Chicago	6.00 to 6.50
Cinci., deal.	5.50 to 6.00
Cleveland	7.75 to 8.00
Detroit	6.50 to 7.00
E. Pa., chem.	10.00 to 12.00
N. Y., deal.	4.00 to 4.25
Pittsburgh	9.50 to 10.00
St. Louis	3.50 to 4.00

PIPE AND FLUES
Cinci., deal.	4.50 to 5.00

RAILROAD GRATE BARS
Buffalo	5.00 to 5.50
Chicago, net	7.50 to 8.00
Cincinnati	5.00 to 5.50
Eastern Pa.	9.00 to 9.50
N. Y., deal.	4.50 to 5.00
St. Louis	6.00 to 6.50

FORGE FLASHINGS
Boston, dealers	4.50 to 5.00
Buffalo	9.00 to 9.50
Cleve. ov. 10 in.	9.00 to 9.50
Detroit	7.50 to 8.00

FORGE SCRAP
Boston, deal.	4.00 to 4.25
Buffalo	7.50 to 8.00
Chi., elec. fce.	8.00 to 8.50
Cleveland	7.25 to 7.50
Eastern Pa., del.	9.00 to 10.00
St. Louis	4.00 to 4.50

STEEL CAR AXLES
Birmingham	9.00 to 9.50
Boston, ship. pt.	8.00 to 8.50
Buffalo	10.00 to 11.00
Chicago, net	11.50 to 12.00
Eastern Pa.	15.50
St. Louis	10.25 to 10.75

SHAFTING
Boston, ship. pt.	9.50 to 10.00
Eastern Pa.	15.00 to 15.50
N. Y., deal.	10.00 to 10.25
St. Louis	7.50 to 8.00

CAR WHEELS
Birming., iron	9.00 to 9.50
Boston, iron deal.	5.50 to 6.00
Buffalo, iron	8.00 to 9.00
Buffalo, steel	11.00 to 11.50
Chicago, iron	9.50 to 10.00
Chi., rolled steel	11.50 to 12.00
Cincinnati, iron	8.50 to 9.00
E. Pa., iron	11.50 to 12.00
E. Pa., steel	12.00 to 13.00
Pitts., iron	11.50 to 12.00
Pitts., steel	14.50 to 15.00
St. Louis, iron	8.50 to 9.00
St. Louis, steel	10.00 to 10.50

NO. 1 CAST SCRAP
Birmingham	9.00 to 10.00
Boston, No. 2	4.50 to 5.00
Boston, textile	8.00 to 8.50
Buffalo, cupola	10.00 to 10.50
Buffalo (mach.)	11.00 to 11.50
Cleve. cupola	10.50 to 11.00
Chi., mach. net	10.50 to 11.00
Chi., railroad net	10.00 to 10.50
Cinci., mach. cup.	9.00 to 9.50
Cleve. cupola	10.00 to 10.50
Detroit, net	8.50 to 9.00
E. Pa., cupola	11.50 to 12.00
N. Y., cup. deal.	6.00 to 6.50
N. Y., del. local foundries	9.00 to 9.50
Pitts., cupola	11.00 to 12.00
San Fran., del.	13.50 to 14.00
Seattle	4.50 to 6.50
St. Louis, No. 1	8.50 to 9.00
St. L. No. 1 mach.	8.50 to 9.00

HEAVY CAST
Boston, del.	5.25 to 5.50
Bost., mach. cast	7.00 to 7.50
Buffalo, break	7.00 to 8.00
Cleve., break	7.50 to 8.00
Detroit, auto net	9.50 to 10.00
Detroit, break.	6.50 to 7.00
Eastern Pa.	10.00 to 10.50
N. Y., No. 1, deal.	6.00 to 6.50
N. Y., break. deal.	6.25 to 6.75
Pittsburgh	10.00 to 10.50

MALLEABLE
Boston, consum.	9.50 to 10.00
Buffalo	11.50 to 12.00
Chicago, R. R.	11.00 to 11.50
Cinci., agri. del.	8.50 to 9.00
Cinci., R. R. del.	9.00 to 9.50
Cleveland, rail	11.50 to 12.00
Detroit, auto	8.50 to 9.00
St. Louis, R. R.	9.00 to 9.50

RAILS FOR ROLLING
5 feet and over
Birmingham	9.00 to 10.00
Boston, deal.	6.00 to 6.50
Buffalo	9.00 to 9.50
Chicago	11.00 to 11.50
Eastern Pa.	11.00
New York, dealer	7.00 to 7.25
St. Louis	10.50 to 11.00

LOCOMOTIVE TIRES
Chicago, cut	11.00 to 11.50
St. L., No. 1	8.50 to 9.00

LOW PHOS. PUNCHINGS
Buffalo	11.00 to 11.50
Chicago	11.00 to 11.50
Eastern Pa.	12.00 to 13.00
Pittsburgh	15.00 to 15.50

scrap, as strong demand and limited supplies meet. Resistance of melters to present prices is spirited. Cargoes by lake from Detroit and Canada continue to arrive, three having been unloaded the past week.

Chicago—Additional buying of heavy melting steel has been done at $10.75. Purchases by one mill are estimated to involve 15,000 to 20,000 tons. The market continues strong and expectations are for higher levels in view of absence of large lots of available scrap at recent levels and prospect of a maintenance of the current steelmaking rate.

Boston—Supply of some grades of scrap is light, and, with demand more active, 25 and 50-cent advances have been made on some grades. Steelmaking scrap is strong with Worcester paying $7.75 minimum, delivered, for No. 1 and slightly higher for tonnage.

A large consumer of heavy melting steel in New England is reported to have offered sharply advanced delivered prices for a heavy tonnage of No. 1 originating outside New England territory.

New York—Heavy melting steel, advancing to $8, barge, for No. 1, has doubled in price since the upturn in steel production. The low point was $4 offered by dealers. Demand for scrap is heavy and broader with a sellers' market developing. Desired grades are not coming out heavily at present prices, which are registering advances frequently.

Philadelphia—Scrap trading is increasingly speculative, with prices shifting rapidly. Supplies are scarce and dealers, many of whom have lost substantially on recent contracts, are quoting on as little as they can at as high as they can. Practically all grades are advancing, with No. 1 steel tentatively at $10.50 to $11, delivered; No. 2 at $9.50 to $10; and No. 1 railroad wrought at $12 to $12.50. The principal cast grades have moved up 50 cents to $1.50 a ton; and higher prices are being expected momentarily.

Buffalo — Scrap dealers have marked up leading grades 50 cents or more. Sales of No. 2 heavy melting steel are said to have been made in fair tonage at $10 to $10.50, while No. 1 steel is held for a minimum of $11.

Detroit—Competition for steel scrap is strong among local consumers and higher prices developing at Cleveland and other adjacent consuming centers are drawing tonnage from this district. Prices of steel grades have been advanced 75 cents, which is about in line with Pittsburgh and Valley quotations. Other grades are up 50 cents to $1.

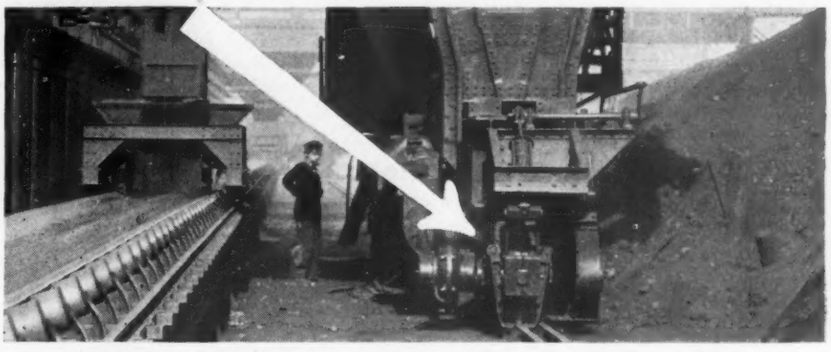
Cincinnati—Heavy melting steel has been advanced 50 cents, to $9 to $9.50 with the entire market considered strong. Dealers are avoiding short sales.

Birmingham, Ala.—Further activity is reported by dealers, with prices firming. Heavy melting steel is finding outlet in quantity where dealers are willing to sell. Two sellers have taken contracts for delivery through September.

St. Louis—Iron and steel scrap prices continue to rise, a further revision upward having been made generally. Demand is active, particularly for heavy melting steel and specialties. Cast and malleable grades are moving more freely at the top figure of the present rise. The differential between cast scrap and pig iron is attractive.

Japanese steel mills have extended July-August prices on medium steel round bars for August-September delivery.

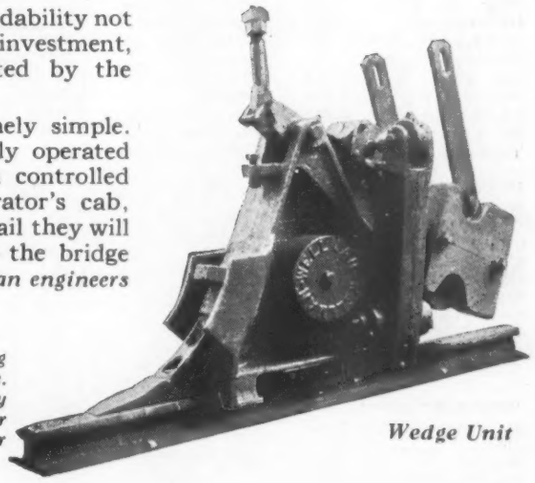
Traveling Structures Held Fast *in extremely heavy winds*



. *by* WELLMAN SAFETY STOPS

This great factor of dependability not only protects the plant investment, but is greatly appreciated by the bridge operator.

The operation is extremely simple. Wedge units are smoothly operated by a special mechanism controlled by a button in the operator's cab, and should the current fail they will set by gravity and stop the bridge without shock. *Ask Wellman engineers for details.*



Wedge Unit

Illustration above shows pier leg of six-ton coal handling bridge. This bridge has Wellman Safety Stops serving all trucks on pier leg and outside trucks on shear leg.

Steel Mill Equipment . . Coal and Ore Handling Equipment . . Car Dumpers, all types Williams Buckets and Trailers . . Gas Producers, Flues, etc. . . Gas Reversing Valves Blast Furnace Skip Hoists . . Safety Stops for Traveling Structures . . Special Cranes Port and Terminal Equipment . . Castings and Machine Work to customers' drawings

THE WELLMAN ENGINEERING CO.
ENGINEERS CONSTRUCTORS MANUFACTURERS
WELLMAN
CLEVELAND, OHIO
BIRMINGHAM • NEW YORK • MEXICO CITY

Warehouse

Demand Holds June Rate; Prices Show Strength

Pittsburgh—A leading warehouse interest in Pittsburgh has advanced black, galvanized and blue annealed sheets $3 a ton. The new price of No. 25 black sheets is 3.15c for over 25 bundles delivered in Pittsburgh, 3.50c on No. 24 galvanized and 2.50c on No. 10 blue annealed. Galvanized roofing squares have also been advanced. There is no change in other prices and sales are holding well.

Chicago—Galvanized sheets have been advanced $5 a ton to 4.10c for local delivery and 4.00c for outside delivery. Business continues active and sales recently turned upward following a moderate lull early in the month.

Boston—Warehouse steel prices are unchanged, including sheets, but advances are expected with the clarifying of the general steel code. Volume holds to the recent rate, somewhat under that of last month.

New York—With few exceptions warehouse volume is slightly under last month, although one leading distributor notes a substantial gain, despite several days lost because of the holiday closing early in the month. Prices are unchanged with increasing firmness on most products.

Detroit—Demand for iron and steel out of warehouse continues at about the early July rate, which is equivalent to a strong showing for the season. A little die work for new models is filtering out. Prices are unchanged.

Philadelphia — Warehouse prices are unchanged, with sales slightly less. Much interest being centered in formulation of a warehouse code to supplement the steel code. Swedish iron from warehouse has been advanced from 5.60c to 6.00c per pound.

Cincinnati—Warehouse demand is at the June figures. Prices are unchanged, but several items may be revised upward soon to accord with mill adjustments.

St. Louis—Distribution of iron and steel from warehouse during the first three weeks of this month has been at the same general rate as during the comparable period in June, but well ahead of the corresponding time a year ago.

Bernth & Starkey, steel fabricator, 3493 Klickitat avenue, Seattle, has changed its name to Bernth & Co., F. W. Starkey having withdrawn from the partnership.

Warehouse Quotations at Leading Centers, in Cents Per Pound

(All Philadelphia prices subject to quantity differentials, except reinforcing and Swedish bars)

STEEL BARS

Baltimore*	2.45c
Boston††	2.50c
Buffalo	2.95c
Chattanooga	3.00c
Chicago	2.75c
Cincinnati	3.00c
Cleveland	2.75c
Detroit	2.85c
Houston	2.40c
Los Ang.	3.30c
New Orleans	2.50c
New York‡ (d)	3.10c
Philadelphia	2.45c
Pittsburgh	2.50c-2.60c
Portland	3.15c
San Fran.	3.15c
Seattle	3.00c
St. Louis	3.00c
St. Paul	3.00c
Tulsa	3.25c

IRON BARS

Baltimore	2.35c
Boston††	2.70c
Chattanooga	3.00c
Chicago	2.75c
Cincinnati	3.00c
Detroit	2.85c
New York‡(d)	3.10c
Philadelphia	2.45c
St. Louis	3.00c
Tulsa	3.25c

REINFORC. BARS

Baltimore	2.35c-3.00c
Boston	3.10c-3.25c
Buffalo	2.95c
Chattanooga	3.00c
Cincinnati	3.00c
Cleveland	2.00c-2.45c
Detroit	2.85c
Houston	3.00c
Los Ang. cl.	2.10c
New Orleans	2.75c
Los Ang., lcl	2.40c
New York	2.65c-3.10c
Phila.	2.62½c
Pittsburgh	2.50c-2.60c
San Fran. cl.	2.00c
San Fran. lcl	2.40c
Seattle	3.00c
St. Louis	3.15c
Tulsa	3.25c
Young.	2.30c-2.60c

SHAPES

Baltimore*	2.45c
Boston††	2.60c
Buffalo	3.20c
Chattanooga	3.20c
Chicago	3.00c
Cincinnati	3.25c
Cleveland	2.95c
Detroit	3.10c
Houston	2.65c
Los Ang.	3.30c
New Orleans	3.50c
New York(d)	3.10c
Philadelphia	2.45c
Pittsburgh	2.85c
Portland	3.50c
San Fran.	3.15c
Seattle	3.00c
St. Louis	3.25c
St. Paul	3.25c
Tulsa	3.50c

PLATES

Baltimore*	2.45c
Boston††	2.60c
Buffalo	3.20c
Chattanooga	3.20c
Chicago	3.00c
Cincinnati	3.25c
Cleveland, ¼ in. and thicker	2.95c
Cleve., 3/16-in	3.20c
Detroit	3.10c
Det., 3/16-in.	3.10c
Houston	3.00c
Los Angeles	3.30c
New Orleans	3.50c
New York (d)	3.30c
Philadelphia	2.45c
Phila. floor	5.10c
Pittsburgh	2.85c
Portland	3.50c
San Fran.	2.80c
Seattle	3.00c
St. Louis	3.25c
St. Paul	3.25c
Tulsa	3.50c

NO. 10 BLUE

Baltimore*	2.70c
Boston††	2.35c
Buffalo	3.10c
Chattanooga	3.44c
Chicago	2.75c
Cincinnati	3.05c
Cleveland	2.75c
Det., 8-10 ga.	2.90c
Houston	3.35c
Los Ang.	3.40c
New Orleans	3.25c
New York	3.00c
Portland	4.25c
Pitts.**	2.75c
San Fran.	3.33c
Seattle	3.50c
St. Louis	3.00c-3.15c
St. Paul	3.45c
Tulsa	3.70c

NO. 24 BLACK

Balt.*†	3.25c
Boston††	3.45c
Buffalo	3.25c
Chattanooga	3.50c
Chicago	3.45c
Cincinnati	3.60c
Cleveland	3.25c
Detroit	3.30c
Los Ang.	3.80c
New York	3.65c
Pitts.**	3.40c
Portland	4.75c
San Fran.	3.95c
Seattle	4.25c
St. Louis	3.60c
St. Paul	3.695c
Tulsa	4.75c

NO. 24 GAL. SHEETS

Balt.*†	3.75c
Buffalo	3.75c
Boston††	4.00c
Chattanooga	3.95c
Chicago	4.00c-4.10c
Cincinnati	4.00c
Cleveland	3.85c
Detroit	3.50c
Houston	3.57c
Los Ang.	4.00c
New Orleans	4.25c
New York	4.00c
Pitts.**	3.75c-4.00c
Portland	5.25c
San Fran.	4.55c
Seattle	4.75c
St. Louis	3.75c
St. Paul	4.19c
Tulsa	5.10c

†BANDS

Baltimore	2.75c
Boston††	3.00c
Buffalo	3.30c
Chattanooga	3.20c
Chicago	2.95c
Cincinnati	3.20c
Cleveland	3.00c
Det. 3/16-in. & lighter	3.15c
Houston	2.85c
Los Ang.	3.80c
New Orleans	2.75c
New York(d)	3.30c
Philadelphia	2.75c
Pittsburgh	2.95c
Portland	3.85c
San Fran.	3.15c
Seattle	3.50c
St. Paul	3.20c
Tulsa	3.45c
St. Louis	3.20c

†HOOPS

Baltimore	2.65c
Boston	4.90c
Buffalo	3.55c
Chicago	3.50c
Cincinnati	3.75c
Det. No. 14 & lighter	3.65c
New York	3.30c
Philadelphia	3.00c
Pittsburgh	3.60c
Seattle	5.00c
St. Paul	3.75c

COLD FIN. STEEL

Baltimore (c)	3.33c
Boston (g)	3.60c
Buffalo	3.00c
Chattanooga*	3.65c
Chicago	3.00c
Cincinnati	3.32c
Cleveland	2.95c
Detroit	3.15c
Los Ang.	5.50c
New Orleans	4.25c
Philadelphia	3.35c
Pittsburgh	2.95c
Portland (f)	4.50c
San Fran.(d)	5.50c
Seattle (f)	4.50c
St. Paul	3.20c
St. Louis	3.36c
Tulsa	4.65c

COLD ROLL. STRIP

Boston 0.100 in., 500 lb lots	5.20c
Buffalo	5.25c
Chicago (b)	5.65c
Cincinnati	5.80c
Cleve. (b)	5.55c
Detroit	5.40c
Phila. (c)	4.55c
New York	4.55c

(a) Rounds, hex, only.
(b) Net base straightening, cutting boxing 1 ton or more.
(c) Plus mill, size and quantity extras.
(d) Minus quant. diff.
(e) New mill classif.
(f) Rounds only.
(g) Bessemer analysis extras included.

‡Domestic bars.
*Plus quan. extras.
**Under 25 bundles.
*†50 or more bundles.
†New extras apply.
††Base 40,000 lbs., extras on less.

Prices at Detroit, Cleveland, New York, Chicago, Pittsburgh Cincinnati, Chattanooga and St. Louis on heavier lines are subject to new quantity differentials:
399 pounds and less, up 50c; 400 to 999 pounds, base; 1000 to 4999 pounds, 20c off; 5000 to 9999 pounds, 40c off; 10,000 to 39,999 pounds, 60c off; 40,000 pounds and over 75c off.

Pacific Coast

Pipe Awards Lead Activity—Some Prices Advanced While Others Remain Unchanged—Much Prospective Work Holds Promise of Future Buying—Financing Needs Cause Delay

San Francisco—(*By Air Mail*)—Cast iron pipe was the most active market of the week, over 2600 tons being placed, with more than 4900 tons up for figures or pending. No further change in price of mill products has occurred but warehouse prices in the San Francisco district have been advanced in several lines.

Pacific Coast Steel Corp. booked 172 tons of reinforcing bars for a planetarium in Los Angeles and unnamed interests took 150 tons for two bridges in Valley county, Idaho, for the state. Bids have been opened on 895 tons for the water and power department, Los Angeles, and on 140 tons for the Irish-American home in San Francisco. Mittry Brothers Construction Co. is low on placing 625 tons for the Eaton Wash dam, Los Angeles. No change is noticed in out-of-stock quotations and 2.05c, base, carload, appears firm.

San Francisco awarded a 72-inch siphon at Alameda creek on the basis of reinforced concrete, steel lined, to an unnamed interest. About 135 tons of plates were involved, though over 500 tons would have been used had the pipe gone all steel. Prices hold at 1.75c, c.i.f.

Pacific Iron & Steel Co. took 250 tons of shapes for a planetarium in Los Angeles and Midwest Steel & Iron Works secured 150 tons for trashracks at Minnequa, Colo., for the bureau of reclamation. Bids have been opened on 700 tons for tunnel lining and 30,000 tons for transmission towers, for Los Angeles. Pending business exceeds 40,000 tons. Wide flange material is firm at 2.20c, c.i.f., with standard shapes 2.10c.

Central Foundry Co. took 1595 tons of 6 and 8-inch cast iron pipe for San Francisco and Riverside, Calif., placed 1000 tons of 4 to 12-inch pipe with the United States Pipe & Foundry Co. Bids open July 18 for 172 tons for Alhambra, Calif.

Much Pending at Seattle

Seattle—Anticipation of higher prices is keeping the Pacific Northwest market expectant. Buying has not been pronounced but important projects are maturing. Distribution of federal funds will stimulate activity as the plans for many public works are ready for action.

Awards this week included shapes, cast iron pipe and reinforcing bars, totaling nearly 500 tons. Isaacson Iron Works, Seattle, booked 200 tons of structurals for remodeling of a brewery for the Century Brewing Co., Seattle. For the same job Pioneer Sand & Gravel Co., Seattle, took 40 tons of reinforcing bars. Soule Steel Co., Portland, Oreg., is reported to be furnishing 131 tons reinforcing bars for the Fairbanks, Alaska, school, McDonald Building Co., St. Louis, having the general contract.

Business pending includes: 1000 tons 24 and 30-inch cast iron pipe for Denny Way improvement, Seattle, bids July 20; 135 tons 10-inch pipe for Snohomish, Wash., awaiting finances; 400 tons for McNeil Island, Wash., prison, bids, July 18; 300 to 500 tons plates and shapes for motorship for Northland Transportation Co., Seattle; bids in; about 1000 tons plates in Alderwood Manor pipeline, bids July 15; 75 tons cast iron pipe, 12-inch for Tacoma, bids in.

One leading company has advanced the mill price of plates from 1.80c to 2.10c. Portland jobbers have advanced sheets 25 cents and plates, shapes and bars 15 cents.

Steel in Europe

British Markets Hopeful; Continent Feels Gain

London—(*By Radio*)—Conditions in steel and iron markets have changed little and the outlook continues hopeful. Scottish works are closing the week of holidays with fair orders and inquiries. Pig iron makers face serious Continental competition in export markets. Domestic railroad constructional steel demand is increasing. In the Midlands conditons are good. Export trade generally is quiet.

The Continent reports export trade dull, with German and French domestic markets improving.

Current Iron and Steel Prices of Europe

Dollars at Rates of Exchange, July 20

Export Prices f.o.b. Ship at Port of Dispatch—By Cable (or Radio)

	British gross tons U. K. ports	£ s d	Continental Channel or North Sea ports, metric tons Gold parity, $4.8665	£ s d	£ s d
PIG IRON					
Foundry, 2.50-3.00 Silicon	$13.84	2 18 6	$8.27		1 14 0
Basic bessemer	12.77	2 14 0*	7.30		1 10 0
Hematite, Phos. .03-.05	13.95	2 19 0	.....		.....
SEMIFINISHED STEEL					
Billets	$23.65	5 0 0	$11.44		2 7 0
Wire rods, No. 5 gage	35.48	7 10 0	21.90		4 10 0
FINISHED STEEL					
Standard rails	$36.66	7 15 0	$26.77		5 10 0
Merchant bars	1.40c	6 12 6	.66c		3 0 0
Structural shapes	1.56c	7 7 6	.61c		2 15 0
Plates, †¼ in. or 5 mm.	1.74c	8 5 0	.86c		3 18 6
Sheets, black, 24 gage or 0.5 mm.	1.90c	9 0 0	1.29c		5 17 6
Sheets, gal., 24 gage, corr.	2.32c	11 0 0	1.60c		7 5 0
Bands and strips	1.64c	7 15 0	.80c		3 12 6
Plain wire, base	1.85c	8 15 0	1.18c		5 7 6
Galvanized wire, base	2.22c	10 10 0	1.38c to 1.40c	6 5 6 to 6 7 6	
Wire nails, base	2.53c	12 0 0	1.27c		5 15 0
Tin plate, box 108 lbs.	$ 4.08	0 17 3	.....		.....

British ferromanganese $68 delivered Atlantic seaboard, duty-paid. German ferromanganese £9 0s 0d ($43.74) f.o.b.

Domestic Prices at Works or Furnace—Last Reported

		£ s d		French Francs		Belgian Francs		Reich Marks
Fdy. pig iron, Si. 2.5	$14.78	3 2 6(a)	$11.18	200	$11.97	300	$21.51	63
Basic bessemer pig iron	13.95	2 19 0(a)*	10.90	195	11.97	300	23.73	69.50
Furnace coke	3.13	0 13 3	6.71	120	4.39	110	6.57	19.25
Billets	23.65	5 0 0	22.64	405	17.56	440	32.95	96.50
Standard rails	1.74c	8 5 0	1.74c	697	1.98c	1,100(b)	2.05c	132
Merchant bars	1.45c	6 17 6	1.40c	560	.96c	535	1.71c	110
Structural shapes	1.85c	8 15 0	1.38c	550	.96c	535	1.67c	107.50
Plates, †¼-in. or 5 mm.	1.79c	8 10 0	1.20c	680	1.22c	675	1.97c	127
Sheets, black	2.11c	10 0 0§	2.13c	850‡	1.35c	750‡	2.23c	144‡
Sheets, galv., corr., 24 ga. or 0.5 mm.	2.64c	12 10 0	3.63c	1,450	2.61c	1,450	5.74c	370
Plain wire	1.85c	8 15 0	2.83c	1,130	2.34c	1,300	2.74c	177
Bands and strips	2.00c	9 10 0	1.55c	620	1.22c	675	1.97c	127

*Basic. †British ship-plates. Continental, bridge plates. §24 ga. ‡1 to 3 mm. basic price.
British quotations are for basic open-hearth steel. Continental usually for basic-bessemer steel.
a del. Middlesbrough. b Since January

Nonferrous Mill Products

Base price cents per pound f.o.b. mill except otherwise specified. Copper and brass product prices based on 9.00c, Conn., for copper

Sheets	
Yellow brass (high)	14.00
Copper, hot rolled	15.62½
Lead sheets, cut to jobbers	8.25
Zinc sheets (100-lb. base)	9.00
Tubes and Pipes	
Seamless yellow brass (high)	15.87½
Seamless copper	16.12½
Rods	
Yellow brass (high, full turning)	11.75
Naval brass	11.87½
Anodes	
Copper, untrimmed	14.00
Wire	
Yellow brass (high)	14.25

Old Metals

Dealers' buying prices, cents lb

No. 1 Composition Red Brass	
New York	5.00 to 5.25
Chicago	5.25 to 5.50
Cleveland	5.75 to 6.25
St. Louis	4.75 to 5.00
Heavy Yellow Brass	
New York	3.75 to 4.00
Heavy Copper and Wire	
New York	6.75 to 7.00
Chicago, No. 1	6.50 to 6.75
Cleveland	6.00 to 6.50
St. Louis	5.75
Composition Brass Borings	
New York	4.75 to 5.00
Yellow Brass Tubing	
Cleveland	4.50 to 5.00
Light Copper	
New York	5.50 to 5.75
Chicago	5.25 to 5.50
Cleveland	5.50 to 6.00
St. Louis	5.50
Light Brass	
Chicago	3.25 to 3.50
Cleveland	3.50 to 4.00
St. Louis	3.00 to 3.25
Lead	
New York	3.50 to 3.62½
Cleveland	3.00 to 3.50
Chicago	3.25 to 3.50
St. Louis	3.25 to 3.50
Zinc	
New York	2.25 to 2.50
Cleveland	2.25 to 2.75
Chicago	2.50 to 2.75
St. Louis	2.75 to 3.00
Aluminum	
Clippings, new, soft, Cleve.	13.00 to 14.50
Clippings, hard, Cleveland	9.00 to 10.00
Borings, Cleveland	5.00 to 6.00
Mixed cast, Cleveland	7.50 to 8.50
Mixed cast, St. Louis	7.00 to 7.50

Secondary Metals

Brass ingot, 85-5-5-5	9.00
Remelt aluminum No. 12	12.25 to 13.00

Metals

—Further Advances Apparently In Prospect—Surplus Stocks Are Cut—Tin Is Erratic

New York—Buoyancy in the metal markets last week was supported by reported progress on codes of fair competition for several of the leading producing industries. Market opinion favors higher prices in the near future. Advances to date are substantial but are less than for most other commodities.

Copper—Electrolytic metal appeared ready to advance to 9.25c, Connecticut, at midweek but this was checked by the drop in stock and commodity prices. Fairly good tonnages were booked at 9.00c and there was no indication of a recession from this level, even on the part of speculative interests. Some sellers held out of the market or named a nominal quotation of 9.00c. World copper stocks were cut more than 37,000 tons in June. Deliveries in the United States jumped to 51,300 tons from 34,000 tons in May. Phelps Dodge has increased output to 20 per cent of capacity and the Mufulira interest in Africa also will resume.

Lead—Demand quieted down late in the week but some sellers continued to book fair tonnages. Consumers now are about 75 per cent covered on August requirements. July bookings already total around 40,000 tons. Stocks in the hands of producers were cut more than 4000 tons in June, the first downtrend reported since last October.

Zinc—Sales of prime western and high-grade metal were in fair volume. All sellers were reluctant to take business, especially for future delivery, due to the prospects for a further advance in concentrate prices. Some sellers held out of the market entirely. While some business in prime western was done at 4.95c, East St. Louis, the general level was 5.00c.

Tin—Quotations were largely nominal with only a little business done. The price situation was extremely uncertain due to the gyrations of sterling exchange. Fluctuations in tin prices amounted to several cents per pound. Consumption continues at an active rate despite the check in buying.

Distillates Are Firm

New York—Distillate prices are firm, but unchanged. Demand for toluol and xylol continued brisk, largely against contracts, there being little material available in the open market. Benzol is also active, a larger volume going for industrial uses, while demand for motor fuels is steady. Naphthalene trading is mostly for spot lots from consumers who underestimated regular requirements. Phenol and sulphate of ammonia are unchanged.

Coke By-Products

	Spot
Per Gallon Producers' Plants, Tank Lots	
Pure benzol	$0.22
90 per cent benzol	0.22
Toluol	0.30
Solvent naphtha	0.26
Commercial xylol	0.26
Per Pound at Producers' Plants in 250-Pound Drums	
Phenol	0.153 to 0.173
Per Pound at Producers' Plants	
Naphthalene flakes	4.75 to 5.75
Naphthalene balls	4.75 to 5.75
Per 100 Pounds Atlantic Seaboard	
Sulphate of ammonia	$1.20

Quicksilver Is Steady

New York—Quicksilver prices are steady at the advanced levels reached early in the week. Small lots are $63.50 to $64.50 a virgin flask of 76 pounds and round lots at $63 with no large offerings under that despite recent levels around $62.50 a flask.

Nonferrous Metal Prices of the Week, Cents a Pound

Spot unless otherwise specified

	Copper: Electro., del. Conn.	Copper: Lake, del. Midwest	Copper: Casting, refinery	Straits Tin: New York Spot	Straits Tin: New York Futures	Lead N. Y.	Lead East St. L.	Zinc St. L.	Aluminum 98-99%	Antimony Spot, N. Y.	Ingot Nickel
July 15	9.00	9.12½	8.75	46.62½	46.75	4.50	4.35	4.95	*22.90	7.50	35.00
July 17	9.00	9.12½	8.75	46.75	46.90	4.50	4.35	5.00	*22.90	7.50	35.00
July 18	9.00	9.12½	8.75	47.75	47.90	4.50	4.35	5.00	*22.90	7.50	35.00
JJuly 19	9.12½	9.37½	8.87½	47.25	47.40	4.50	4.35	5.00	*22.90	7.50	35.00
July 20	9.00	9.12½	8.75	45.75	45.90	4.50	4.35	5.00	*22.90	7.50	35.00
July 21	9.00	9.12½	8.75	46.00	46.15	4.50	4.35	5.00	*22.90	7.50	35.00

*Nominal quotation. Market range 19.90c to 22.90c.

Men of Industry

(*Concluded from Page* 19)

accepted appointment from the Tennessee Valley commission to make a study of prospects for proposed decentralization of industry in that region.

□ □ □

Paul G. Leoni, of William H. Muller & Co., New York, importers of pig iron and ores, has returned from abroad after an absence of almost a year. He is expected to return to Europe in about a month.

□ □ □

C. F. Smith has been appointed factory manager of the American-La France & Foamite Corp., Elmira, N. Y., succeeding H. S. Snodgrass, who has resigned because of ill health.

□ □ □

S. B. Cairns, formerly in charge of fence sales at Monessen, Pa., for the Page Steel & Wire Co. has been appointed sales manager on the Pacific coast with headquarters at San Francisco.

E. F. Billin has been appointed successor to Mr. Cairns, in charge of fence sales at Monessen.

□ □ □

L. W. Grothaus, who has served as general representative in charge of the sales organization of the Allis-Chalmers Mfg. Co., Milwaukee, has been appointed assistant to the president. His immediate duties are to direct the company's interests in matters pertaining to the industrial recovery act as they relate to commercial problems. Mr. Grothaus went with the Allis-Chalmers organization in 1904, when the Bullock Electric Mfg. Co. was acquired. He has been manager of the Minneapolis and Cleveland district offices and assistant manager of the electrical department in charge of the Norwood and later of the Milwaukee Works.

Walter Geist, who succeeds Mr. Grothaus as general representative, has been with the company since 1909, in the flour mill, saw mill and power transmission divisions. He invented the "Texrope drive." Since 1928 he has been assistant manager of the milling machinery department.

Sheet Sales in June Up 71 Per Cent; Output Higher

Sheet sales in June continued the strong upward pace established a month ago, total sales amounting to 246,737 net tons, compared with 144,192 tons in May, an increase of over 71 per cent, according to the National Association of Flat Rolled Steel Manufacturers, Pittsburgh.

Total production in June was 166,272 tons, compared with 139,696 tons in May, an increase of 19 per cent. Shipments totaled 152,953 tons, compared with 119,159 tons in May, an increase of over 28 per cent.

Unfilled orders on July 1 totaled 229,436 tons, compared with 136,592 tons on June 1, an increase of 68 per cent. Approximate finished stock on hand awaiting shipment was 54,288 tons; approximate stock unsold was 50,067 tons. These figures are based on a capacity of 325,000 tons. Total sheet capacity of the United States for the month of June was approximately 550,000 tons.

Pencoyd No Longer Is Base for Shapes

(*Concluded from Page* 14)

increase in certain leading eastern consuming centers. For instance, at Philadelphia the delivered price, based on the difference in the freight rate between Philadelphia and Pencoyd and Philadelphia and Bethlehem, will amount to about 6.60 cents per 100 pounds.

Sparrows Point, Md., has been added to the eastern basing points on pig iron. This, naturally, will affect eastern Pennsylvania shipments into Baltimore. In quoting for that district eastern Pennsylvana producers have been using a Swedeland, Pa., basing point of 2.02 cents per 100 pounds, plus the surcharge. With Sparrows Point basing point a 90 cent freight rate, plus surcharge, will be used.

Sparrows Point has been reaffirmed as an eastern basing point on plates, along with Coatesville, Pa. The Youngstown basing point on plates, however, has been eliminated. A change in eastern basing points is noted in wire products. While Worcester, Mass., continues an eastern basing point on several items, it is eliminated as a base on others, including wire nails and staples, barbed wire and wire fencing. Gary, Ind., and Youngstown have been added to the list on reinforcing bars, but Pittsburgh and Buffalo remain the basing points for the East.

In common iron bars several new basing points were officially recognized for the first time, there now being 14 common iron basing points in all. Of the 14 for the entire country 10 are located in the East.

This brings up the question as to whether or not there will be more basing points for bolts and nuts, a somewhat affiliated product and one not referred to in the basing schedules listed in the code. Meetings of the bolt and nut group are being held in New York to perfect a supplemental code, at which the question of basing points is being discussed. It is believed likely, however, that there

NONSHRINK OIL HARDENING

TOOL STEEL TUBING

A saving will be realized by using our Tool Steel Tubing. Carried in stock up to 12" O.D. x 2" wall thickness. It is excellent for all classes of dies, slitters, spacers, bushings, etc.

We also supply a special tubing conforming in analysis to S.A.E. 52100 and S.A.E. 4615 designed particularly for Ball Bearing purposes. Can be furnished in Hot Rolled or Cold Drawn finish.

THE BISSETT STEEL CO., Inc.

945 East 67th St., CLEVELAND, OHIO

Cincinnati Pittsburgh Buffalo

will be no change from the present bases of Pittsburgh, Cleveland, Birmingham and Chicago.

While the application of the steel code, which specifies the maximum working week of 40 hours will very materially spread employment on such continuous operations as pig iron and coke production, it is not expected for the time being to have any great influence at eastern plants in the spreading of work in the steelmaking and finishing departments. Having long employed a stagger system to provide work for as many employes as possible, the leading producers will have to receive still greater tonnages before the 40-hour limit will have material bearing on these departments.

There are and will be exceptions. For instance, at one large eastern tin plate mill, operating at virtual capacity, and on three 8-hour shifts for five days a week, or 40 hours a week for each individual several hundred men have long since been added. At some steel plants longer than the usual 8-hour day has been in effect and at most plants longer schedules have applied on some miscellaneous jobs. These operations will be directly affected by the 40-hour limit under the steel code, but the number of additional men required cannot be accurately estimated at this time.

Rerollers Forgotten?

Various features of the steel code are coming in for widespread discussion. The proposed ruling to the effect that consignment stocks should be eliminated, except in the case of pipe which is being taken under further advisement by the American Iron and Steel institute, is receiving the condemnation of some jobbers.

In the case of some of the more standard products, the attitude of the jobbers is one of acceptance. However, on special items—stainless steel, for instance—the feeling is that the cost of material is too great and the markets for this material is yet not sufficiently developed for distributors to carry the burden. Some objection is also voiced among producers who feel that the development of markets for their products will be hindered.

Re-rollers count themselves among the forgotten men. At least the interpretation of the code in some quarters is that they will be forced to quote the same prices as will be named for prime material. In the East alone, there are at least a half dozen of these rerollers, some doing a substantial business. It is believed they will demand clarification on this point and will endeavor to obtain the existing differentials of $5 a ton—at least on certain items—that are now in effect. They believe that to be forced to quote on an equal basis with the producers of prime material would spell doom for their enterprises. A sympathetic ear, it is believed, might be offered by Assistant Administrator Allen, who at one time was affiliated with the rerolling as well as the primary producing industry.

Impressed with the widespread interest, a district sales manager for a large eastern producer recently suggested the printing of the steel code in compact, booklet form for distribution in the trade with the companys' compliments. Company officials, however, turned down the proposal on the basis that the action might be interpreted as unfair practice. They simply were taking no chances.

Prices of various producers are expected to be filed with the institute some time this week, along with definitions of classifications. On some of the flat rolled products these definitions are already being distributed in the trade and should go a long way toward needed classification.

For instance, plate prices in the future will be quoted on thicknesses of not less than ¼-inch up to and including 48-inch and not less than 3/16-inch thick on widths over 48 inches.

Sheet prices will apply on gages up to but not including one ¼-inch for widths of 24 up to 48 inches inclusive and up to but not including 3/16-inch for widths over 48 inches. Strip prices will be quoted on widths of 6 inches up to but not including 24 inches, gages up to but not including one quarter inch. There are at least a couple of exceptions, one having to do with a circle extra.

While all indications point to the industry going on a single price basis, with preferential quotations eliminated, it appears this will not become generally effective until after the close of this quarter.

In the case of car builders, for instance, it is understood that some producers are quoting a flat 1.60c price on plates, shapes and bars for all basing points for shipments up to Sept. 30. No qualifying or protective clauses are included in such contracts.

Concessions To Go

Such a price represents increases of varying degrees, depending no little upon the locations of the plants. At the same time such a price will represent a concession of $2 a ton under the general going market for shapes and plates in the east after Aug. 1, when the 1.70c, eastern basing point, price becomes effective.

While the directors of the institute —30 in all—will be the governing body in the operation of the steel code, when approved, the executive committee which formulated, or guided the formulation of the code, will continue a major factor in its direction.

Union More Active In Organization

PITTSBURGH—That the unions are making a determined fight to gain a strong foothold in the steel industry is evidenced by important steps in the process of being taken in the steel plants of the Pittsburgh district.

The lone remainder of the days when the industry was completely unionized—the Amalgamated Association of Iron, Steel and Tin Workers—has been making a bold and significant effort to gain a foothold in unionizing whatever branches of the industry possible.

Growing out of the National Recovery act which specifies collective organization of the steel mills' workers, and seeking to use the self-initiated employe representation plans that the steel companies' executives brought out several weeks ago, this union has announced an effort to unionize as much of the steel industry, regardless of product produced, as possible.

Increased office forces, increased numbers of walking delegates, and picketing have been weapons adopted by this association. In three plants alone of the Pittsburgh district pickets are already at work. In the steel plants of the Wheeling, W. Va., district picketing has been prominent.

So far these efforts toward inciting unionism have met with only fair success. At Gary, Ind., some membership has been enrolled and as well in other districts there have been some joiners.

In the main the company employe representation plans, as detailed first in STEEL, June 19, pages 13 and 38, have worked out satisfactorily. Elections have been held and functioning of this form of representation for employes in problems affecting their welfare has gone ahead smoothly.

Sheets

(*Concluded from Page* 34)

partly on the heavy business since then.

New York—With some sheet mills over-scheduled deliveries have been set back a week and in some cases longer. New inquiry is fairly active with most sellers now accepting contracts for delivery by Sept. 30. Blanket inquiries for third quarter and last half raise the question of ethics under the new steel code. Some sellers are inclined to adhere to the spirit of the code even if at a loss.

Here and There in Industry

FERRO ENAMEL CORP., Cleveland, R. A. Weaver, president is expanding operations by supplying enamel products to more varied branches of the ceramic industry. Heretofore its material has been supplied only to enameled metal manufacturers. An alliance has been made with Allied Engineering Co., Columbus, O., for the sale of enamel materials to the pottery and clay tile fields. Manufacturing and laboratory service will be furnished. Another recent affiliation is with the Copper and Brass Research association, New York, new formulas having been evolved for enameling on copper industrially. Furnace-building interests of the Ferro Enamel Corp. have been merged with the Surface Combustion Corp., Toledo, O., which will install and engineer the porcelain enameling furnaces developed by the latter.

□ □ □

Geuder, Paeschke & Frey Co., Milwaukee, has formed a Talky-Tyres division, to manufacture animated steel signs, in charge of A. A. Henkel.

□ □ □

Great Northern railroad has reopened its railroad repair shops at Hillyard, Wash., closed since April, employing 338 men eight hours a day six days.

□ □ □

Sullivan Machinery Co., Chicago, has moved its St. Louis office from the Railway Exchange building to 2639 Locust street, where it has warehouse facilities.

□ □ □

Chain Belt Co., Milwaukee, has moved its St. Louis office from 339 North Taylor avenue to 5475 Cabanne avenue, continuing in charge of Fitch S. Bosworth.

□ □ □

National Supply Co., Torrance, Calif., and Union Tool Co., a division, are employing additional workers and are on full time on an increasing number of job orders.

□ □ □

Lufkin Foundry & Machine Co., Lufkin, Tex., has opened a sales office at 806 Second National Bank building, Houston, Tex. C. B. Edwards is district sales manager.

□ □ □

Erie Bolt & Nut Co., Erie, Pa., has appointed the Moorland Co., Tulsa, Okla., and Houston, Tex., its distributor in both these centers. Stocks of bolting equipment will be carried.

□ □ □

Alco Products Inc., Dunkirk, N. Y., has taken an order for a large two-unit refinery for a subsidiary of the Atlas Pipe Line Co. Inc., Shreveport, La. The plant will have capacity of 4000 barrels daily.

□ □ □

Pittsburgh Steel Co., Pittsburgh, has appointed Edgar T. Ward's Sons its distributors in Newark, N. J., and Philadelphia districts for its seamless steel boiler tubes. Stocks will be carried in each city.

□ □ □

Chapman Valve Mfg. Co., Indian Orchard, Mass., has taken over rights and licenses of the Automatic Cone Valve Co., Mattoon, Ill. Equipment has been moved to the Massachusetts plant and production increased.

□ □ □

Wrought Washer Mfg. Co., 2104 South Bay street, Milwaukee, has appointed H. M. Swain, 52 Maypole road, Quincy, Mass., distributor and direct representative in New England for its line of washers and other products.

□ □ □

H. A. Brassert & Co., Chicago, engineers and contractors, have received a contract from the Republic Steel Corp., Youngstown, O., for remodeling one of its blast furnace gas washers and installing a precipitator for fine cleaning of blast furnace gas at its Hazleton plant, Youngstown, O. This is the first unit at this plant designed to clean blast furnace gas for metallurgical purposes.

Equipment

Moderate Gains Continue—Japan Back in Market

Pittsburgh—Despite the unparalleled rise in steel mill activity, reluctance on the part of leading producers still is present regarding the releasing of important plant rehabilitation work. The only recent mill equipment work to have been placed in this district is for some single bar mill stands. However, with ingot melting rates five times what they were three months ago, and rolling mill schedules likewise affected, considerable mill facilities have been placed in operation for the first time in more than three years. This has meant a large volume of repair part buying and equipment builders in this district are getting most of their business at present from this source. Buying of steel mill rolls still is a feature, with orders well distributed among sheet and plate rolls as well as those for the production of special sections.

Chicago—Moderate gains are reported in sales of various types of plant machinery and equipment, while inquiries are increasing steadily. Sellers have a fairly large volume of work in prospect on which bids have been entered. Steel plants are requiring larger lots of ingot molds and mill rolls as a result of further gains in steel furnace and rolling operations. Railroad purchases still are limited principally to immediate requirements and few orders have appeared for machine tools or other machinery.

New York—Inquiry for machinery and equipment is encouraging and a fair number of individual orders have been placed. Japan is placing business here again. A Brooklyn instrument builder has bought additional equipment following purchases several weeks ago. Demand is largely for special machines, standard tools lagging. There is, however, a brisk demand for used equipment, but largely of the heavier type.

Western Maryland railroad is taking figures on a second hand double-acting steam hammer. A New Jersey ball bearing plant recently booked an attractive order for Russia. Lidgerwood Mfg. Co., Elizabeth, N. J., took a $56,232 order for steering equipment for the navy. On twelve bench drills and combination grinders, six of each for the navy, mostly eastern shops, Kemp Machinery Co., is low on the former and the Hisey-Wolf Machine Co., Cincinnati, on the grinders.

Boston—New England machine building plants are generally holding recent gains in business which in some instances have produced higher operating schedules. Textile mill equipment builders continue the busiest group. Heald Machine Co., Worcester, grinding machinery builder, has adopted a 40-hour week schedule and to take care of anticipated shop work is now running two shifts. The first shift is from 7 a.m. to 2:30 p.m., the second from 2:30 p.m. to 11 p.m., with 30 minutes for lunch on both shifts.

Ball bearing plants continue active, one Connecticut maker having booked substantial business recently from a large agricultural machine builder.

Form Air Filter Group

National Association of Air Filter Manufacturers was organized by leading manufacturers of air filters during the June sessions of the National Association of Heating and Ventilating Engineers in Detroit. One objective was the adoption of a code under the industrial recovery act. J. L. Harpham, Independent Air Filter Co., was elected president; J. S. Irvine, Owens-Illinois Glass Co., vice president; and J. R. McConnell, American Air Filter Co., secretary.

Construction and Enterprise

New England

SOUTH BOSTON, MASS.—White Fuel Co., 888 East First street, is taking bids for a coal-handling plant to cost $75,000. George P. Carver, 62 Dane street, Beverly, Mass., is engineer.

SOUTHBRIDGE, MASS.—Russell Harrington Cutlery Co., has been incorporated with $250,000 capital, by J. C. Wells, president.

New York

NEW YORK—General Galvanizing & Supply Co. Inc. has been incorporated with $5000 capital to deal in metals and metal products, by Morris Toback, 134 Avenue U, Brooklyn, N. Y., and associates.

NEW YORK—North American Iron & Steel Co. Inc. has been incorporated with $20,000 capital to deal in iron, steel and nonferrous metals, by Max E. Greenberg, 220 West Forty-second street, New York.

NEW YORK—Foundry Services Inc. has been incorporated with 100 shares no par value to operate a foundry, by Bloom & Scherl, 25 West Forty-third street, New York.

NEW YORK—Checker Electric Iron Specialty Co. Inc., has been incorporated with $5000 capital to manufacture electrical equipment, by David Blitzer, 149 Broadway, New York.

New Jersey

JERSEY CITY, N. J.—Metal Cone Mfg. Co. will build a 2-story addition to its plant.

HIGH BRIDGE, N. J.—Exact Level & Tool Co. will build a plant to cost $40,000.

WEST ORANGE, N. J.—Applicraft Corp. has been incorporated with $25,000 capital to manufacture metal cutouts.

Pennsylvania

PHILADELPHIA—A. Gruenewald, 911 Dorset street, has leased a 3-story building, 122 x 133 feet at North American and Philip streets, and will remodel and equip it for a brewery and ice manufacturing plant, including tanks, conveyors, pumps, ice machinery and electric power equipment.

Ohio

CINCINNATI — Payne Plumbing Fixtures Co. has been incorporated with $200,000 capital to manufacture plumbing equipment and supplies, by T. F. and F. B. Payne. Will install lathes, and polishing and plating departments. Address company, care E. D. Woodward, 414 Walnut street, Cincinnati.

DAYTON, O.—Dayton Rubber Mfg. Co., West Riverview avenue, plans a powerhouse and equipment, to cost $100,000.

WARREN, O.—Warren Scrap Iron & Metal Co. has been incorporated with 250 shares no par value to deal in scrap metals, by Bernard W. Rosenberg, 801 Union Savings & Trust building, Warren, O.

Michigan

DETROIT—May Screw & Mfg. Co., 2157 Howard street, has been incorporated with $10,000 capital to manufacture screw machine products, by P. R. May, 642 Gladstone avenue, Detroit.

DETROIT—S. M. S. Corp. has been incorporated with 20,000 shares no par value to manufacture electrical products, by Vaughan Reid, 1161 Harper avenue, Detroit.

LANSING, MICH.—S. C. Jacka, city engineer, is preparing plans for two grade separations costing $50,000 each and for completion of a sewage disposal plant at cost of $75,000.

WYANDOTTE, MICH.—Pittsburgh Forgings Co., 8-254 General Motors building, Detroit, plans to build a foundry plant here at Goddard & Allen roads.

Southern States

BIRMINGHAM, ALA.—United States Pipe & Foundry Co. is making extensive improvements at its plant at Bessemer, Ala., installing centrifugal pipe machinery to increase its output materially.

JACKSONVILLE, FLA. — Clyde-Mallory S. S. Co., Jacksonville, G. W. Bartlett, general agent, Pier 36, North River, New York, plans a precooling refrigerating plant for fruit at East Bay street and refrigerating machinery for three of its fruit ships.

FORT THOMAS, KY.—City council has a survey under way for a municipal electric light and power plant by Burns & McDonnell Engineering Co., 107 West Linwood boulevard, Kansas City, Mo., consulting engineer.

Missouri

KANSAS CITY, MO.—Utility Equipment Corp. has bought a 2-story industrial building at 126 Grand avenue and will start production at once of a prefabricated metal building for use along bus lines, 8 x 30 feet, including restaurant, rest rooms and soda fountain.

ST. LOUIS—Coil Mfg. Co., 1527 Olive street, has been incorporated to manufacture piston rings. R. A. Hagen is president.

ST. LOUIS—National Metals Corp. has been incorporated to manufacture storage batteries, by M. Cohen, 215 North Second street, president.

ST. LOUIS—Sieloff Brine Spray Co. has been incorporated with $2000 capital to manufacture spray units for refrigeration equipment, by Emil Sieloff 4320 Sacramento avenue, St. Louis.

Texas

AMARILLO, TEX.—Shamrock Oil & Gas Co., Amarillo building, is reported to have contracted with Stearns-Rogers Mfg. Co., Denver, for construction of a gasoline plant in Moore county with daily capacity of 60,000,000 feet of gas.

DALLAS, TEX.—Lawrence Gasoline Plant, has been incorporated with $1000 capital by R. Miller, 1601 Colonial place, Dallas, Tex.

OVERTON, TEX.—Trio Refining Co., Shreveport, La., has filed notice of intention to operate in Texas, with construction of a plant here. B. H. Crittenden, Overton, Tex., is Texas agent.

Wisconsin

MILWAUKEE—G. R. Fehr Inc., 2755 South Thirty-fourth street, Milwaukee, is low bidder at $693,041 for construction of an aeration and sedimentation tank extension for the Milwaukee sewage disposal plant on Jones island. J. L. Ferebee is chief engineer.

SHEBOYGAN, WIS.—Invincible Metal Furniture Co., Manitowoc, Wis., has been given a contract for furnishing all movable steel equipment for the new $500,000 court house here, at about $24,000.

Pacific Coast

SNOHOMISH, WASH.—City council is considering plans for improvement of the water supply system, including a 14-mile gravity line. Clarence Hickey is consulting engineer.

BERKELEY, CALIF.—B. F. Sturtevant Co., 2530 Sixth street, will build a steel and corrugated plant for the manufacture of ventilating devices. Mr. Dixon, Monadnock building, San Francisco, is in charge.

LOS ANGELES—John Deere Plow Co., Moline, Ill., has bought a site here, 140 x 300 feet, at Wilson and Violet streets, on which it will build a reinforced concrete plant.

Dominion of Canada

DUNDAS, ONT.—Steel Fabricating & Welding Ltd., Hamilton, Ont., plans erection of a plant here.

MONTREAL, QUE.—Barry Tanks & Welding Ltd., A. M. Barry manager, 4027 Beaconsfield street, plans erection of a plant for the manufacture of steel and aluminum tanks.

MONTREAL, QUE. — Canadian Equipment Co. Ltd., 1111 Beaver Hall hill, plans a 40 x 80-foot building for repair of air compressors, engines and other heavy machinery, at Ville St. Laurent, Quebec, near here. Tools and equipment will be bought.

SWIFT CURRENT, SASK.—Swift Current Oil Refining Co. Ltd., George Bremner, Swift Current, president, will build a refinery of 200,000-barrel capacity.